Honeywell

HDZ Series

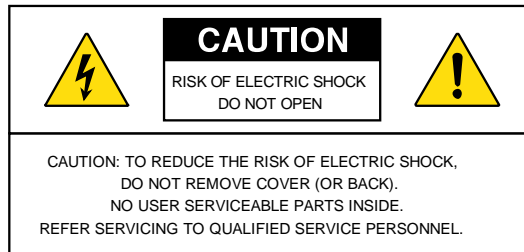## 1080p IP PTZ Dome

HDZ20HD   HDZ20HDX
HDZ20HDE   HDZ20HDEX

User Manual

Revisions

Issue	Date	Revisions
A	07/2012	New document.
V1 Rev A	09/2012	Revised for NA compatibility, and few corrections made to reflect product development.
V2 Rev A	07/2013	Revised for regulatory corrections based on product UL report.

Cautions and Warnings

| CAUTION |
| RISK OF ELECTRIC SHOCK
DO NOT OPEN |

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING **Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.**

WARNING **To ensure compliance with electrical safety standards, CSA Certified/UL Listed Class 2 power adapters are required. High Power over Ethernet (PoE+) shall be supplied by listed Information Technology Equipment meeting the IEEE 802.3at-2009 PoE+ standard. The PoE is not intended to be connected to exposed (outside plant) networks.**

Regulatory Statements

FCC Compliance Statement

Information to the User: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

Manufacturer's Declaration of Conformance

The manufacturer declares that the equipment supplied with this guide is compliant with the European Parliament and Council Directive on the Restrictions of the use of certain Hazardous Substances in electrical and electronic equipment (2011/65/EU), General Product Safety Directive (2001/95/EC) and the essential requirements of the EMC Directive (2004/108/EC), conforming to the requirements of standards EN 55022 for emissions, EN 50130-4 for immunity, and EN 60950-1 for electrical equipment safety.

WARNING **This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**

Waste Electrical and Electronic Equipment (WEEE)

Correct Disposal of this Product (applicable in the European Union and other European countries with separate collection systems).

This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Safety Instructions

Before installing or operating the unit, read and follow all instructions. After installation, retain the safety and operating instructions for future reference.

1. **HEED WARNINGS** - Adhere to all warnings on the unit and in the operating instructions.

2. **INSTALLATION**

    • Install in accordance with the manufacturer's instructions.

    • Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

    • Do not install indoor-rated models in outdoor locations.

    • Any wall or ceiling mounting of the product should follow the manufacturer's instructions and use a mounting kit approved or recommended by the manufacturer.

3. **POWER SOURCES** - This product should be operated only from the type of power source indicated on the marking label.

4. **HEAT** - Situate away from items that produce heat or are heat sources such as radiators, heat registers, stoves, or other products (including amplifiers).

5. **MOUNTING SYSTEM** - Use only with a mounting system recommended by the manufacturer, or sold with the product.

6. **ATTACHMENTS** - Do not use attachments not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.

7. **ACCESSORIES** - Only use accessories specified by the manufacturer.

8. **CLEANING** - Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

9. **SERVICING** - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

10. **REPLACEMENT PARTS** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards. Using replacement parts or accessories other than the original manufacturers may invalidate the warranty.

CAUTION   **Risk of explosion if Battery is replaced by an incorrect type. Dispose of used batteries in accordance with local laws.**

Warranty and Service

Subject to the terms and conditions listed on the Product warranty, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective products returned prepaid.

In the event you have a problem with any Honeywell product, please call Customer Service at 1.800.323.4576 for assistance or to request a **Return Merchandise Authorization (RMA)** number.

Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative.

Prior authorization must be obtained for all returns, exchanges, or credits. **Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA) number may be refused.**

Contents

Figures

Tables

About This Document

This document provides instructions for installing, configuring, and operating the HDZ Series 1080p IP PTZ dome camera. This document is intended for system installers, administrators, and operators.

Overview of Contents

This document contains the following chapters and appendixes:

- *Chapter 1, Introduction*, provides an overview of the main features of the HDZ Series 1080p IP PTZ dome camera and lists the dimensions of the indoor and outdoor models.

- *Chapter 2, Installing the Camera*, describes how to assemble, connect, and mount the camera.

- *Chapter 3, Accessing the Camera*, describes how to access the camera remotely from a web browser.

- *Chapter 4, Configuring Video and Audio Streaming*, describes how to set up video and audio streaming options, including video resolution, compression, and transmission settings.

- *Chapter 5, Configuring PTZ Settings*, describes how to set up preset, mimic tour, preset tour, and auto pan PTZ functions, privacy masks, and various camera settings (such as exposure, zoom, white balance, backlight compensation, wide dynamic range, noise reduction, image flip, stabilization, and so on).

- *Chapter 6, Configuring Alarms*, describes how to set up notifications for alarm inputs, motion detection, and network failure events.

- *Chapter 7, Configuring System Settings*, describes how to administer user accounts and permissions, how to configure network and recording and storage settings, as well as how to view system parameters, upgrade software, and restore defaults.

- *Appendix A, HDZ Camera Specifications*, lists the specifications of the HDZ Series 1080p IP PTZ dome camera.

- *Appendix B, In-Ceiling Bracket Installation*, provides installation instructions for the in-ceiling mounting bracket.

- *Index* provides a searchable list of key terms.

Related Documents

For more information relating to topics covered in this guide, see the following documents:

Document Title	Part Number
In-Ceiling Bracket Quick Installation Guide	800-12513
HDCM1 Ceiling Mount Installation Guide	900.0869
HDXWM2 Wall Mount Installation Guide	800-04516
HDPRM2 Parapet Mount Installation Guide	900.0877

Typographical Conventions

This document uses the following typographical conventions:

Font	What it represents	Example
Helvetica Narrow	Keys on the keyboard	Press Ctrl+C
Lucida	Values of editable fields that are mentioned in the body text of the document for reference purposes, but do not need to be entered as part of a procedure	The **Time from** field can be set to `Hours:Minute:Seconds`.
	Text strings displayed on the screen	The message `Unauthorized` displays.
Swiss721 BT Bold	Words or characters that you must type. The word "enter" is used if you must type text and then press the Enter or Return key.	Enter the **password**.
	Menu titles and other items you select	Double-click **Open** from the **File** menu.
	Buttons you click to perform actions	Click **Exit** to close the program.
Italic	Placeholders: words that vary depending on the situation	Enter your *user name*.
	Cross-reference to external source	Refer to the *System Administrator Guide*.
	Cross-reference within document	See *Chapter 2, Installation*.

1

Introduction

This chapter includes:

Overview

The Honeywell HDZ Series 1080p IP PTZ dome camera is a high resolution network camera designed for use in a wide range of video surveillance applications. The camera supports H.264 main profile compression and streams video at 30 frames per second (NTSC), or 25 fps (PAL) at 1080p resolution. H.264/H.264 and H.264/MJPEG simultaneous dual video streams are available.

Other features of the 1080p IP PTZ dome camera include:

- 1/2.8" Sony Progressive CMOS image sensor
- 4.7–94 mm vari-focal lens
- 20× optical zoom
- SD memory card support (up to 32 GB)
- True Day/Night with removable IR cut filter (ICR)
- Integrated real-time wide dynamic range (WDR)
- 2D digital noise reduction (2DNR)
- Image flip and rotate
- Backlight compensation
- Motion detection
- Up to 16 privacy masks
- Dual-direction audio support
- ONVIF™ compliance
- Open IP integration (ONVIF), to support interoperability between Honeywell and other manufacturer's IP-enabled devices

Dimensions

The indoor and outdoor HDZ Series cameras have the following dimensions:

Figure 1-1   HDZ20HD(X) Indoor IP PTZ Dome Camera
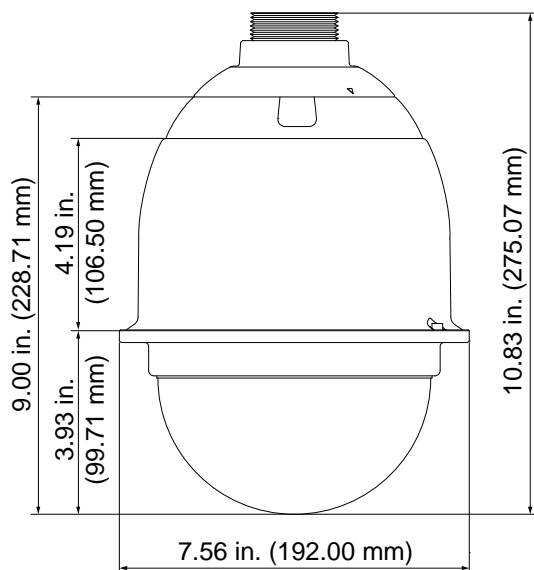
Figure 1-2   HDZ20HDE(X) Outdoor IP PTZ Dome Camera
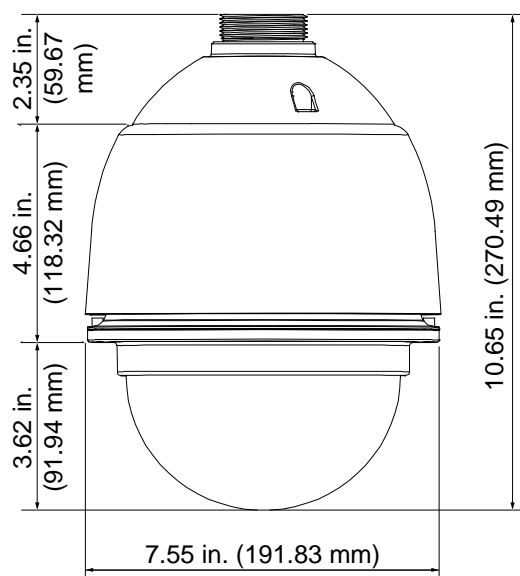
See *Appendix B, In-Ceiling Bracket Installation* for the image and dimensions of the In-ceiling mounting bracket.

2

Installing the Camera

This chapter includes:

Before You Begin

Before you begin, check that you have received all of the parts listed below. If any parts are missing or damaged, contact your dealer immediately.

HDZ20HD(X) Indoor Dome
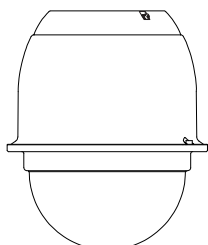
PTZ Indoor dome camera

Lubricant
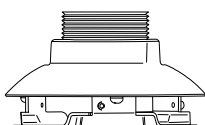
Indoor mounting kit (top cap)

Honeywell logo label
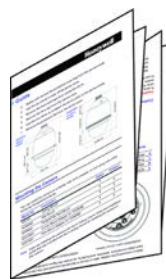
Torx screwdriver

Quick Installation Guide

Installation CD

HDZ20HDE(X) Outdoor Dome
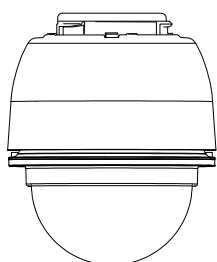
PTZ Outdoor dome camera

Lubricant
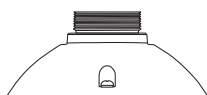
Outdoor mounting kit (top cap)

Honeywell logo label

Torx screwdriver
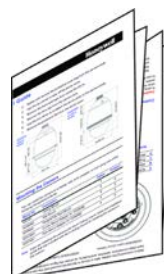
Quick Installation Guide

M5 standard and security screws (1 each)

Installation CD

Accessories You Can Order Separately

There are a few accessories for your HDZ Series 1080p IP PTZ camera that can be ordered separately (see *Table 2-1*).

Table 2-1   Orderable Accessories

Model Number	
HDZVRSMKAC	Smoked PC vandal proof acrylic dome cover for the HDZ series.
HDZVRCLRAC	Clear PC vandal proof acrylic dome cover for the HDZ series.
	Note This part is for repair purposes only.
517082-7130	In-Ceiling PTZ support plate (for use with HDZINBKT in-ceiling mount).

Assembling the Camera

Camera assembly is quick and easy. To assemble the camera:

1. Take the camera and all other components out of the packaging.

2. Rotate and remove the protective cover bag from the camera body.

3. Use the torx driver to take off the dome cover.

4. Remove the foam and tape from inside the dome.

5. Remove the lens cap from the camera lens.

6. Use the torx driver to re-attach the dome cover to the camera body.

7. Leave the protective film on the dome cover until installation is complete.

Mounting the Camera

You can install the camera to a ceiling, wall, pole, parapet, or roof using one of the following Honeywell products:

Table 2-2   Honeywell Mounts and Adapters

Model No.	Description	Indoor	Outdoor
HDCM1	Ceiling Mount	X	
HDXWM2	Wall Mount	X	X
HDPRM2	Parapet/Flat Roof Mount	X	X

Table 2-2   Honeywell Mounts and Adapters (cont'd)

Model No.	Description	Indoor	Outdoor
HDZINBKT	In-Ceiling mounting bracket for the HDZ series.	X	
HDXCMA1	Corner Mount Adapter for HDXWM2	X	X
HDXPMA1	Pole Mount Adapter for HDXWM2	X	X

Note   An In-ceiling mounting bracket (HDZINBKT) is available. Check with your Honeywell supplier regarding In-ceiling mounting. See *Appendix B, In-Ceiling Bracket Installation*, for in-ceiling bracket mounting instructions.

For additional information, see *Related Documents on page 16*.

Using Safety Cable During Installation

The HDZ Series 1080p IP PTZ camera includes an eyelet for attaching a safety cable to securely fix the camera to the mounting structure (see *Figure 2-1*). It is recommended that you install a safety cable (such as a 3/32-in. [2.4 mm] plastic coated aircraft cable) to secure the camera to the building structure. This will prevent the camera from falling during installation. The cable must be strong enough to support the weight of the camera (indoor model: 4.9 lb. [2.2 kg], outdoor model: 5.7 lb. [2.6 kg]).

Figure 2-1   Eyelet on Camera to Secure by Lanyard During Setup

Eyelet location on Indoor dome back panel   Eyelet location on Outdoor dome back panel
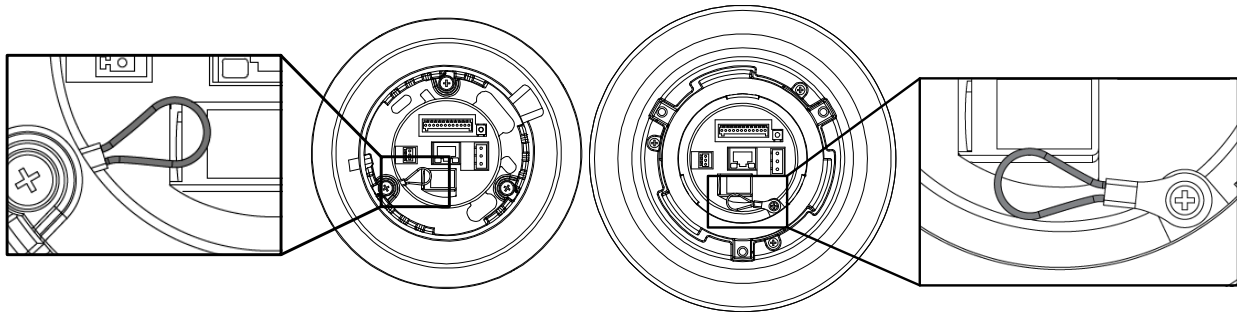
Installing a Ceiling Mount (Indoor Only)

The HDCM1 ceiling mount weighs 4.0 lb. (1.8 kg) and can be installed directly to a load-bearing ceiling. The mount has a maximum load rating of 26.0 lb. (11.7 kg) and is for indoor use only. See the documentation included with the ceiling mount for more information on securing the mount to the mounting surface.

Figure 2-2   HDCM1 Ceiling Mount Installation

To install a ceiling mount:

1. Ensure that the ceiling can support the combined weight of the camera and the mount (should support at least 8.8 lb. [4.0 kg]).

2. Make a cable entry hole in the ceiling.

3. Feed the cables through the mount, leaving approximately 1 ft (0.3 m) extending past the end of the mount (see *Figure 2-2*).

Note   If you are using the recommended safety cable for additional security, feed it through the mount and attach one end to the camera eyelet and the other end to the building structure (see *Figure 2-1*).

4. Attach the mount to the ceiling using appropriate hardware.

5. Screw the indoor mount kit to the bracket.

6. Connect the cables to the camera (see *Connecting the Cables on page 25*). If you are using a Micro SD card, install it before connecting the cables.

Note   Check that the eyelet safety cable connection is secure, and carrying all of the load of the camera after making all cable connections.

7. Attach the camera to the mount kit and then tightly fix the security screw on the top of the camera.

Example of Indoor Dome Ceiling Mount Installation

Feed cables through the mount kit

Screw the mount kit into the ceiling mount

Attach the camera body to the mount kit

Tightly fix the screw at the top of the camera

Installing a Wall Mount

The HDXWM2 wall mount weighs 3.2 lb. (1.45 kg) and can be installed directly to a load-bearing wall, or to a corner or pole using an appropriate adapter. The mount has a maximum load rating of 25.8 lb. (11.7 kg) and can be installed indoors or outdoors. See the documentation included with the wall mount for more information on securing the mount to the mounting surface.

Figure 2-3   HDXWM2 Wall Mount Installation

To install a wall mount:

1. Ensure that the mounting surface can support the combined weight of the camera and the mount (should support at least 8.9 lb. [4.05 kg]).

2. If you are using a corner or pole adapter, feed the cables through the cable access hole of the adapter, and then attach the adapter to the mounting surface using appropriate mounting hardware.

3. Feed the cables through the mount, leaving approximately 1 ft (0.3 m) extending past the end of the mount.

   Optionally, you can feed the cables through the 0.75 in. (19 mm) conduit hole at the base of the mount arm (see *Figure 2-3*).

Note If you are using the recommended safety cable for additional security, feed it through the mount and attach one end to the camera eyelet and the other end to the building structure (see *Figure 2-1*).

4. Attach the mount to the wall or, if applicable, to the adapter using appropriate mounting hardware.

Example of Outdoor Dome Wall Mount Installation

Feed cables through the mount kit

Cable access hole for field service

19 mm (0.75 in.) cable access hold for surface-mounted conduit

Screw the mount kit into the wall mount

Tightly fix the screw at the top of the camera after connecting the three parts

Attach the camera body to the mount kit
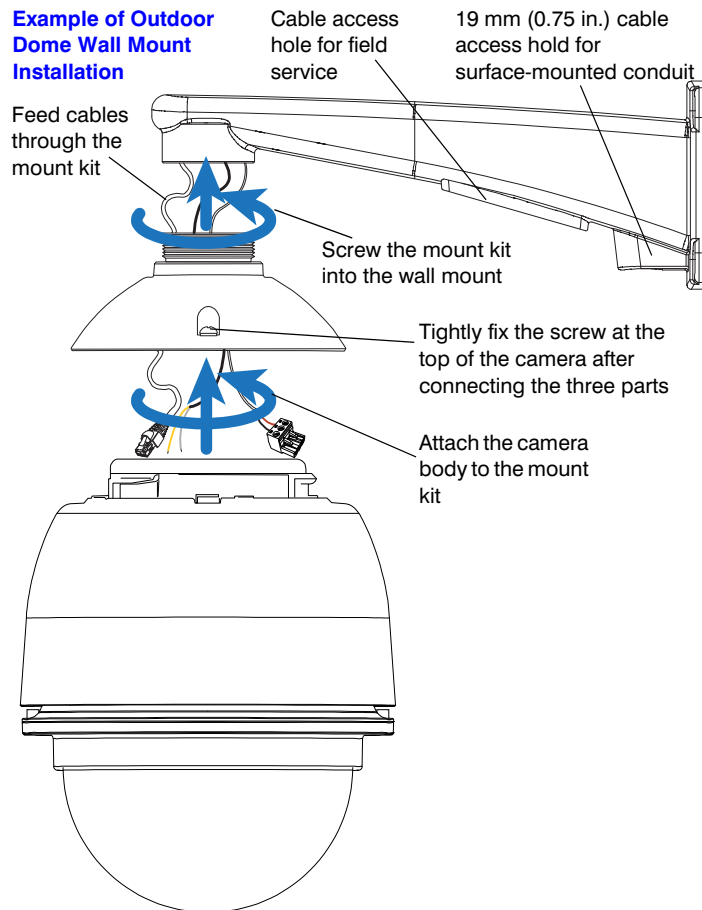
5. For outdoor wall mount installations, apply sealant (not supplied) to any gaps between the mount and the mounting surface, and ensure that the conduit hole plug is in place when the conduit hole at the base of the mount arm is not in use.

6. Screw the mount kit into the wall mount.

7. Connect the cables to the camera (see *Connecting the Cables on page 25*). If you are using a Micro SD card, install it before connecting the cables.

Note   Check that the eyelet safety cable connection is secure, and carrying all of the load of the camera after making all cable connections.

8. Attach the camera to the mount kit and then tightly fix the security screw on the top of the camera.

Installing a Parapet/Flat Roof Mount

The HDPRM2 parapet/flat roof mount weighs 22.5 lb. (10.2 kg) and can be installed directly to a vertical (parapet) or horizontal (flat roof) load-bearing surface. The mount has a maximum load rating of 20.1 lb. (9.1 kg) and can be installed indoors or outdoors. The mount can withstand winds up to 75 mph (121 km/h) when properly fastened to a support structure. See the documentation included with the parapet mount for more information on securing the mount to the mounting surface.

Figure 2-4   HDPRM2 Parapet/Flat Roof Mount Installation

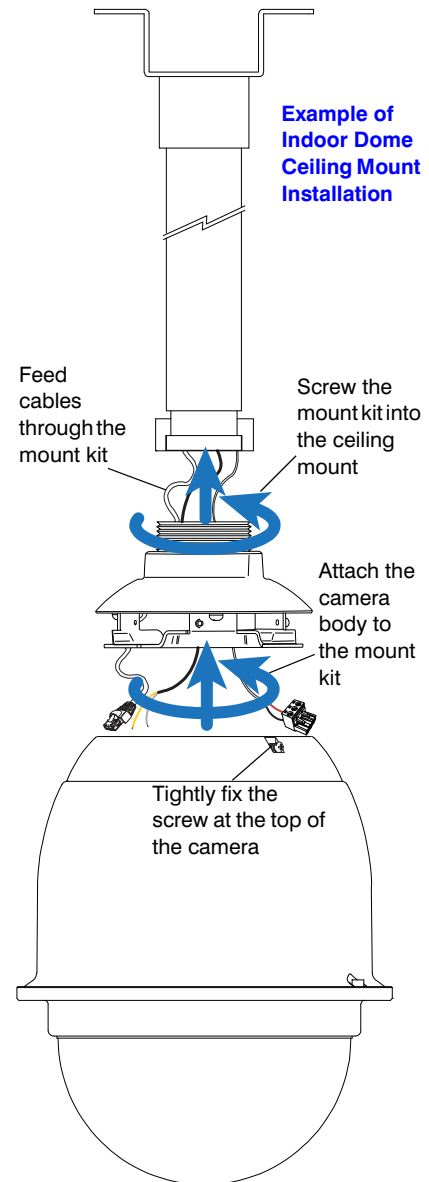**To install a roof mount:**

1. Ensure that the mounting surface can support the combined weight of the camera and the mount (should support at least 28.2 lb. [12.8 kg]).

2. Feed the cables through the mount, leaving approximately 1 ft (0.3 m) extending past the end of the mount.

Note If you are using the recommended safety cable for additional security, feed it through the mount and attach one end to the camera eyelet and the other end to the building structure (see *Figure 2-1*).

3. Attach the mount to the mounting surface using as many of the mounting holes as possible (a minimum of five fasteners on each side of the mounting plate is recommended).

4. Apply sealant (not supplied) to the bottom of the vertical pipe and around the bolt holes to prevent water or other contaminants from entering the mount.

5. Screw the mount kit into the parapet/flat roof mount.

Example of Outdoor Dome Parapet Mount Installation
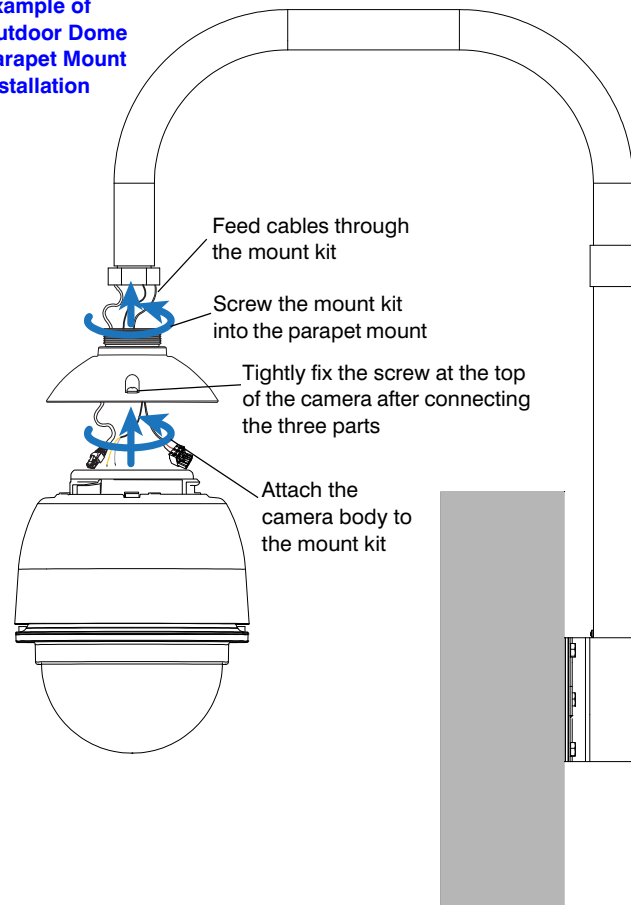
Feed cables through the mount kit

Screw the mount kit into the parapet mount

Tightly fix the screw at the top of the camera after connecting the three parts

Attach the camera body to the mount kit

6. Connect the cables to the camera (see *Connecting the Cables on page 25*). If you are using a Micro SD card, install it before connecting the cables.

Note Check that the eyelet safety cable connection is secure, and carrying all of the load of the camera after making all cable connections.

7. Attach the camera to the mount kit and then tightly fix the security screw on the top of the camera.

Connecting the Cables

Before connecting the cables, take a minute to familiarize yourself with the camera's back plate connectors, switches, and buttons, as shown in *Figure 2-5* and *Table 2-3* below.

Figure 2-5   Camera Back Plate Layout

HDZ20HD(X) Indoor Dome Camera

HDZ20HDE(X) Outdoor Dome Camera
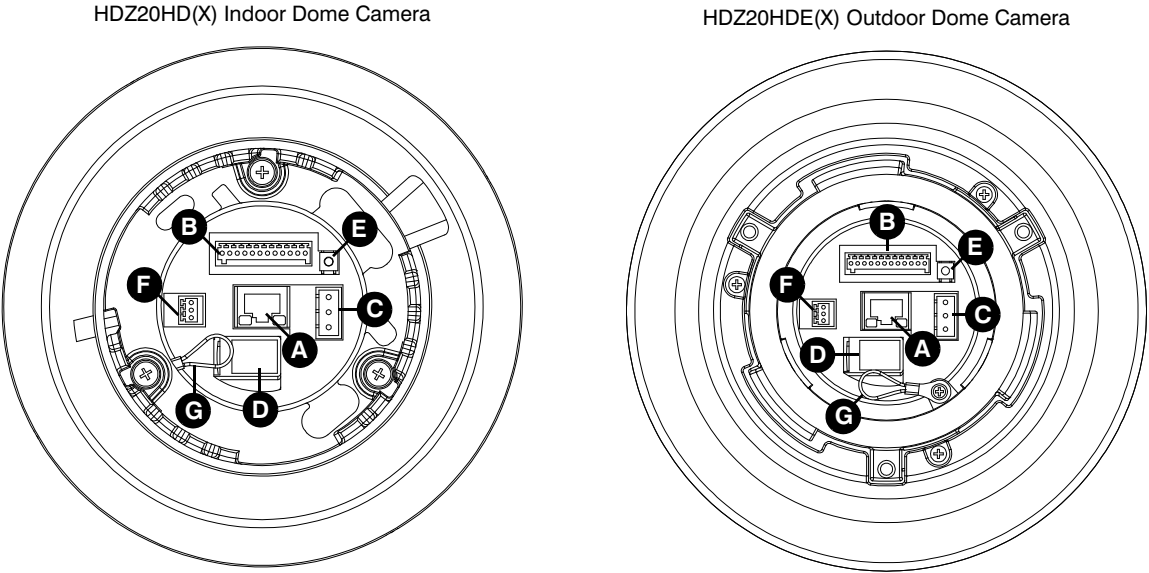
Table 2-3   Camera Back Plate Connectors, Switches, and Buttons

A	RJ45 connector (see *Connecting the Network Cable on page 27* for more information)
B	Alarm Input/Output (see *Connecting Alarm Inputs/Outputs on page 26* for more information)[a]
C	Power (see *Connecting Power on page 28* for more information)[a]
D	SD Memory Card Slot (install a microSDHC card from 8 to 32 GB, as needed). See *Micro SDHC Card Details on page 26* for more information.
E	Factory Reset Button[b]
F	Audio Input/Output (see *Connecting Audio on page 26* for more information)[a]
G	Eyelet to secure camera to building with lanyard during camera setup

[a] Alarm, Power and Audio connections are made with removable connectors.
[b] Press the factory reset button to restore all camera settings to the factory default settings.

Micro SDHC Card Details

We recommend that you use a high quality Micro SDHC card, if required for your system. The high quality Micro SDHC card must have the following minimum specifications (see *Table 2-4*).

Table 2-4   1080p Unit Micro SDHC Card Minimum Requirements

Capacity	Description	Notes
8 GB	8 GB Micro SDHC Card (Class 10)	MLC
16 GB	16 GB Micro SDHC Card (Class 10)	MLC/TLC
32 GB	32 GB Micro SDHC Card (Class 10)	TLC

Note   Once installed, all Micro SDHC cards must be formatted using the Honeywell Web GUI software prior to performing any recording.

Connecting Audio

Refer to *Figure 2-6* and *Table 2-5* when making audio connections to your camera through the main audio adapter.

Figure 2-6   Main Audio Adapter Input (Detail)
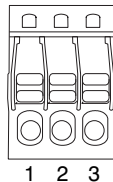
Table 2-5   Audio Input Pin Definitions

Pin	Definition
1	Line Out
2	GND
3	Line In

Connecting Alarm Inputs/Outputs

Refer to *Figure 2-7* and *Table 2-6* when making alarm connections to your camera through the main alarm adapter.

Figure 2-7   Main Alarm Adapter Input (Detail)

1 2 3 4 5 6 7 8 9 10 11 12
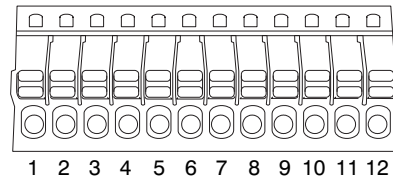
Inputs (x4) 5V, 4700 Ohms, pull up

Outputs (x2) Relay output, AC 120V/DC 30V

Table 2-6   Alarm Input Pin Definitions

Pin	Definition	Pin	Definition
1	Alarm Out NO 1	7	Alarm Out COM 2
2	Alarm Out NC 1	8	GND
3	Alarm Out COM 1	9	Alarm In 4
4	GND	10	Alarm In 3
5	Alarm Out NO 2	11	Alarm In 2
6	Alarm Out NC 2	12	Alarm In 1

Connecting the Network Cable

Connect a Category 5 or higher Ethernet cable to the RJ45 connector on the back plate of the camera (see *Figure 2-5* on *page 25*). The Ethernet cable should not be longer than 328 feet (100 m).

After you have connected the Ethernet cable, check the status of the LED indicators on the RJ45 connector.

• The green LED indicates a network connection.

• The orange LED indicates network activity.

If the LEDs are not lit, re-check the connection.

Note   You may need to use a crossover cable if you are connecting the camera directly to a PC.

Connecting Power

⚠ **CAUTION**   **To power up the camera, either PoE+ or 24V AC power connections can be used. If using power over Ethernet (PoE+), please connect the Ethernet cable to the camera's Ethernet port and plug the other end of the cable into an IEEE 802.3at-2009 High Power over Ethernet (PoE Plus) switch. If there is a need to operate the Heater for the Outdoor model, you will be required to use the 24V AC cable to plug into the camera's power connector and power the camera.**

Refer to *Figure 2-8* and *Table 2-7* when connecting power to your camera through the main power adapter.

Note   Please use the minimum power adapter:

HDZ20HD(X) Indoor Camera: 24 V AC, 0.8 A / PoE+ 20 W.

HDZ20HDE(X) Outdoor Camera: 24 V AC, 2.0 A.

Figure 2-8   Main Power Adapter Input (Detail)
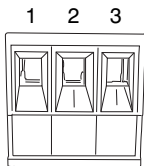
Table 2-7   Power Input Pin Definitions

Pin	Definition
1	24 V AC
2	FG
3	24 V AC

3

Accessing the Camera

Included in this chapter:

System Requirements

To access the camera, your PC must support the following minimum system requirements:

Table 3-1   HDZ Series Minimum System Requirements

Component	Minimum Requirement
Operating system	Windows$^®$ 7
Processor	Intel$^®$ Pentium$^®$ 4 processor, 3 GHz or faster Intel$^®$ Core™2 Duo processor, 2 GHz or faster
System memory (RAM)	1 GB (32-bit)
Graphics card	AGP graphics card 64 MB RAM, DirectDraw
Network card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation
Web browser	Microsoft Internet Explorer 8.0 or later
Viewer	ActiveX control plug-in for Internet Explorer

Finding the Camera on a Network

After you have installed and connected your camera, you can search for it on your local network (LAN) using the Honeywell Device Search application. This application is included on the installation CD that was shipped with your camera. To find a camera on the network:

1. Insert the installation disc into your disc drive and navigate to the Honeywell Device Search folder.

2. Double-click the Honeywell Device Search icon 🔵 to run the application on your computer.

3. Copy the Honeywell Device Search executable file to your computer desktop (or other location) to run the Honeywell Device Search without using the installation disc.

4. Launch the Honeywell Device Search application and click **Device Search** to search for cameras on the network.

   All IP cameras discovered on the network are displayed (as shown in *Figure 3-1*).

Figure 3-1   Honeywell Device Search Application

Assigning a Static IP Address to the Camera

| **Note** | The camera comes with the IP address set as DHCP/APIPA by default. It is not required to switch to a static IP address. Users may choose to keep the default DHCP/APIPA assigned IP address. |

If required, you can assign a static (fixed) IP address to the camera. To assign a static IP address:

1. Launch the Honeywell Device Search application and click **Device Search** (see *Figure 3-1*).

2. Right-click the camera that you want to assign a static IP address, and click **Network Setup**. Make a note of the camera's MAC address for future reference (see *Figure 3-2*).
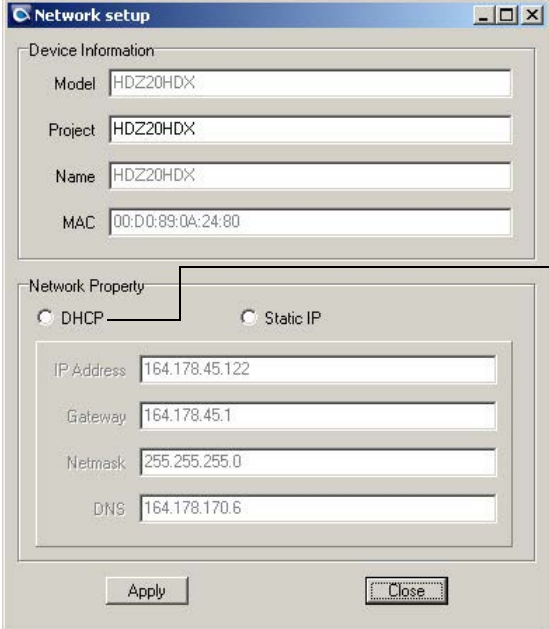
Figure 3-2   Right-Click Menu on Device Search Application

Note The IP Relay function is reserved.

Record the MAC address for future reference
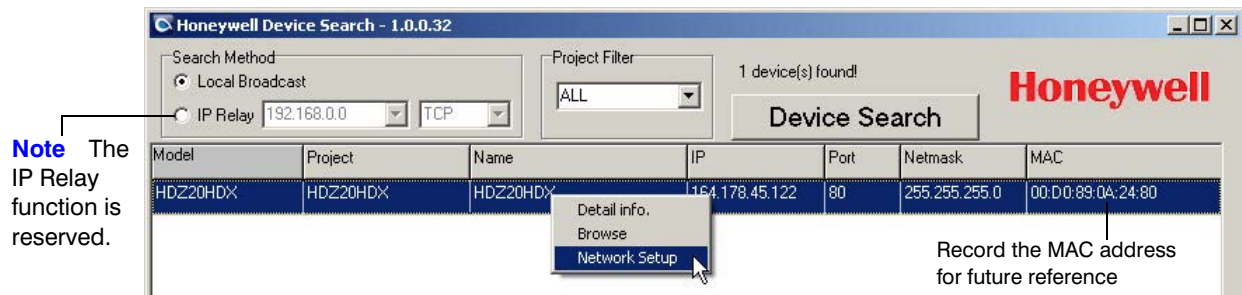
3. In the **Network setup** window (see *Figure 3-3*), select the **Static IP** Network Property option.

4. Fill in the **IP Address**, **Gateway**, **Netmask**, and **DNS** fields, and then click **Apply**.

Contact your network administrator for advice on filling in the IP Address, Gateway, Netmask and DNS fields.

Figure 3-3   Device Network Setup Window

If a static IP address is assigned, users can select the **DHCP** option to assign the PTZ camera a dynamic IP address.

5.   Wait one minute for the new settings to take effect, and then click **Device Search** to refresh the list of network cameras (see *Figure 3-1*).

Accessing the Camera from a Browser

Before accessing the camera, you may need to enable ActiveX settings.

Enabling Internet Explorer ActiveX Settings

To enable Internet Explorer ActiveX settings:

1.   Launch Internet Explorer.

2.   Open the **Tools** menu, and click **Internet Options**.

3.   Select the **Security** tab, and click **Custom level**.

4.   Scroll down the **Security Settings** list until you see the **ActiveX controls and plug-ins** settings section.

5.   Scroll down to **Automatic prompting for ActiveX controls**, and select **Enable**.

6.   Scroll down to **Download signed ActiveX controls**, and select **Enable** or **Prompt**.

7. Scroll down to **Run ActiveX controls and plug-ins**, and select **Enable** or **Prompt**.

8. Scroll down to **Script ActiveX controls marked safe for scripting**, and select **Enable** or **Prompt**.

9. Click **OK**, and then click **OK** again on the Internet Options window.

10. Close and re-launch Internet Explorer for the new settings to take effect.

Accessing the Camera from a Browser

1. Do one of the following to access the camera in a browser:

   • Find the camera that you want to access using Honeywell Device Search and double-click it, or right-click it and then click **Browse** (see *Figure 3-2*).

   • Type the IP address of the camera that you want to access in the address bar of your web browser.

2. At the prompt, type the default user name and password (case sensitive) to access the camera (see *Figure 3-4*).

   • The default user name is **Admin**.

   • The default password is **1234**.

3. Click **OK**.

Note If users have been added or modified, be sure to use the user name and password that has been assigned.

Figure 3-4   Camera Browser Login

Installing and Using Honeywell Viewer for the First Time

The first time you access an HDZ Series 1080p IP PTZ camera, a client program, the Honeywell Viewer, will be automatically installed to your PC when connecting to the camera. If the web browser doesn't allow the Honeywell Viewer to install, please check the Internet security settings or ActiveX controls and plug-in settings to continue the process (see *Enabling Internet Explorer ActiveX Settings on page 31*).

1. After you have connected to the camera, a request to install an ActiveX control will appear on the browser's information bar. Right-click the information bar and then click **Allow ActiveX control** to install the ActiveX control.

2. The Security Warning window will appear (see *Figure 3-5*). Click **Install** to start the Honeywell Viewer software installation.

Figure 3-5   Software Installation Security Warning

3. Click **Finish** to close the installation window once the download and installation is complete.

Note   If the live video pane on the Home Page of the Honeywell Viewer cannot be shown for users who have previously installed the viewer software, you may need to upgrade the Honeywell Viewer software. To upgrade the Viewer software, first remove the old software with the Control Panel and delete the temporary Internet Explorer files, then open the Honeywell website and re-download and install the Viewer program on your PC.

---

4. Once you login to the HDZ Series 1080p IP PTZ camera, a screen that looks like *Figure 3-6* should appear in your browser.

    If this screen does not appear, check your browser's security settings and make sure that ActiveX controls and plug-ins are enabled.

Deleting the Honeywell Viewer Program from a PC

For users that have an older version of the Honeywell Viewer already installed on their PC, you should first remove the existing Viewer program before accessing the HDZ Series 1080p IP PTZ camera.

Deleting the Honeywell Viewer

1. Open the **Control Panel** on your PC and double-click **Add or Remove Programs**.

2. In the **Currently Installed Programs** list, select the Honeywell Viewer and click **Remove** to uninstall the Viewer.

Deleting Temporary Internet Files

To improve browser performance, we recommend that you clean up all of the Temporary Internet Files. To do so:

1. Click the **Tools** menu and select **Internet Options**.

2. Click **Delete** under the **Browsing History** section.

3. Click **Delete Files** under the **Temporary Internet Files** section.

4. A confirmation window will open. Click **Yes** to start deleting the files.

Understanding the Web Client User Interface

Figure 3-6 shows the layout of the web client user interface and the available controls and functions. See the following sections for descriptions of the user interface elements.

Figure 3-6   HDZ Series Camera Browser Home User Interface
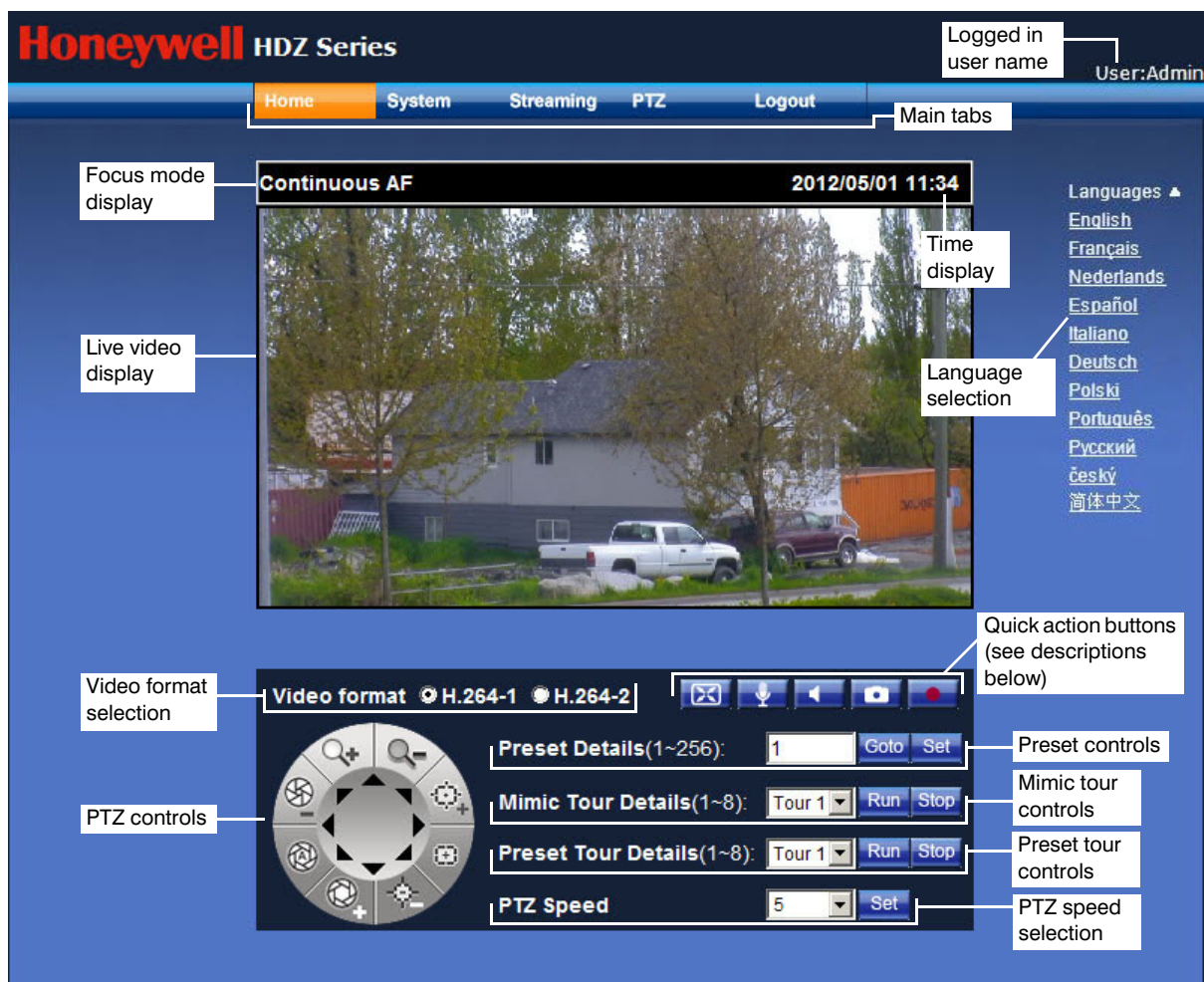
Main Tabs

Table 3-2   Camera Interface Main Tabs

Tab	Description
Home	The tab you see upon logging in. Use this tab to view live video, use the PTZ controls to pan, tilt or zoom the camera, perform tours, go to preset positions and use other controls included on the page. See *Understanding the Web Client User Interface on page 34* for more information on the actions that can be performed on this tab.
System	Use this tab to configure the system, security, users, storage, network and other options available with the camera. See *Configuring System Settings on page 91* for more information on these configuration options.
Streaming	Use this tab to configure the video and audio streaming options available with the camera. Use these settings to adjust the video quality and bandwidth used by the camera. See *Configuring Video and Audio Streaming on page 39* for more information.
PTZ	Use this tab to setup preset points, program PTZ tours, assign privacy masks, and configure other PTZ-related settings. See *Configuring PTZ Settings on page 53* for more information on the available PTZ settings. Camera settings, such as White Balance and Exposure can also be setup on this tab (see *Camera Settings on page 64*).
Logout	Click to logout of the current session.

Quick Action Buttons

Table 3-3   User Interface Quick Action Buttons

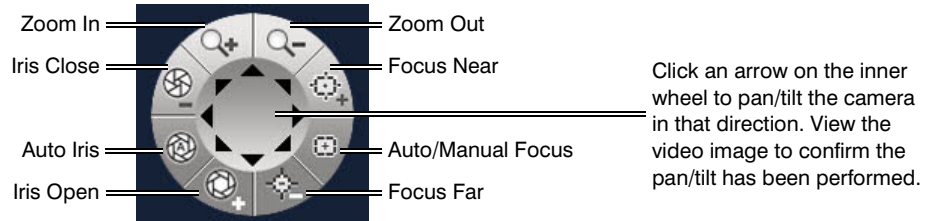| Button	Description
⊠	Click this button to view the video image in full screen mode. Once in full screen mode, double-click or right-click then select Normal View to return to this view.
🎤	The Talk function allows for the local site to talk to the remote site. Click this button to toggle the Talk feature on and off. This function is only available to users that have been granted talk privileges by the administrator. The Audio function must be enabled on the Streaming ➤ Audio tab to use this feature (see *Audio Settings on page 50*).
🔊	The Listen function allows for the local site to hear audio at the remote site. Click this button to mute/enable the remote site audio. This function is only available to users that have been granted listen privileges by the administrator. The Audio function must be enabled on the Streaming ➤ Audio tab to use this feature (see *Audio Settings on page 50*).
📷	Click this button to capture a still image of the currently displayed video. The image will be saved in JPEG format to the local hard drive. The default storage location for still images is `C:\`. See *File Location, page 110*, for more information on changing the location. **Note** Users with a Windows 7 operating system are required to be logged in as an Administrator to use this function.
🔴	Click this button to start recording a video clip of the currently displayed video. Click the button again to stop recording the clip. The image will be saved in AVI format to the local hard drive. The default storage location for video clips is `C:\`. See *File Location on page 110* for more information on changing the location. **Note** Users with a Windows 7 operating system are required to be logged in as an Administrator to use this function.

PTZ Controls

Figure 3-7 PTZ Controls

Zoom In — Zoom Out
Iris Close — Focus Near
Auto Iris — Auto/Manual Focus
Iris Open — Focus Far

Click an arrow on the inner wheel to pan/tilt the camera in that direction. View the video image to confirm the pan/tilt has been performed.

Table 3-4 PTZ Controls and Functions

Control	Description
Zoom In	Zoom in on (enlarge) an area of interest in the video image. Zooming in and out can also be done by moving the cursor over the image and scrolling the mouse wheel forwards and back.
Zoom Out	Zoom out on (reduce size) an area in the video image. Zooming in and out can also be done by moving the cursor over the image and scrolling the mouse wheel forwards and back.
Iris Close	Close the camera iris to darken the video that is displayed.
Auto Iris	Enable/disable the camera Auto Iris mode. In Auto Iris mode, the iris opens/closes automatically according to the needs of the current lighting conditions.
Iris Open	Open the camera iris to brighten the video that is displayed.
Focus Near	Adjust focus to more clearly view nearby objects.
Auto/Manual Focus	Enable/disable the camera Auto Focus mode. In Auto Focus mode, the lens adjusts the focus automatically after any pan, tilt or zoom command.
Focus Far	Adjust focus to more clearly view objects at a distance.
Pan/Tilt Controls	Users can pan and tilt the camera to change the area covered by the camera by clicking the direction arrows in the center of the PTZ control wheel (see *Figure 3-7*). Another option for pan/tilt controls is to place the mouse cursor over the video image and left-click and drag in the direction you want to move the camera. The red arrow icon ( ) indicates the direction that the image will pan/tilt.
Preset Controls	**Preset Set**: Use this command to program a preset point for the camera. Use the pan/tilt controls to move the camera to the desired position. Then use the focus, iris and zoom options to finely tune the preset point and displayed image to be programmed as a preset. See the other commands in this table for more information on adjusting the camera position and view. Enter a number between **1** and **256** to assign to the preset in the field provided (see *Figure 3-6*). Click **Set** to assign the camera's current position and view options to the preset number.

Preset Goto: To quickly go to a preset point, enter the number of the preset in the field provided and click **Goto** (see *Figure 3-6*). The camera will move to the preset position that was previously programmed. |

Table 3-4   PTZ Controls and Functions (cont'd)

Control	Description
Mimic Tour Controls	**Mimic Tour Run**: Select the Mimic Tour line that you want to run with the drop-down list provided (select from tour **1** to **8**) and click **Run** to start the tour (see *Figure 3-6*). The camera will start touring around, mimicking the line that was previously programmed (see *Mimic Tour Settings on page 55* for information on setting up a Mimic Tour). **Mimic Tour Stop**: To stop the Mimic Tour, you can either click **Stop** or move the camera in any direction with the pan/tilt/zoom controls provided.
Preset Tour Controls	**Preset Tour Run**: Select the Preset Tour path that you want to run with the drop-down list provided (select from tour **1** to **8**) and click **Run** to start the tour (see *Figure 3-6*). The camera will start touring around on the path that was previously programmed (see *Preset Tour Settings on page 58* for information on setting up a Preset Tour). **Preset Tour Stop**: To stop the Preset Tour, you can either click **Stop** or move the camera in any direction with the pan/tilt/zoom controls provided.
PTZ Speed	Select the speed at which the camera pans and tilts at when using the control wheel/panel. Select the speed value with the drop-down list provided and click **Set**. Select the PTZ Speed from between 1 and 10. The higher the selected number, the faster the camera will move when using the pan/tilt controls. The speed of the camera when clicking and dragging on an image area will remain unchanged.

On-Screen Display

Figure 3-8 shows the layout of the web client interface with the on-screen display active and displaying the relevant information. See *Setting the Text Overlay on page 44* for more information on the on-screen display options.

Figure 3-8   HDZ Series Camera Browser On-Screen Display

4

Configuring Video and Audio Streaming

Included in this chapter:

Video Format Settings

The HDZ Series 1080p IP PTZ dome camera supports both H.264 and Motion JPEG (MJPEG) video compression standards. It also uses dual streaming technology: both MJPEG/H.264 and H.264/H.264 dual stream options are available. Choose the option that best fits your viewing requirements and network properties (see *Figure 4-1* and *Table 4-1*, *Table 4-2*, *Table 4-3*, and *Table 4-4*).

Figure 4-1   Video Format Settings

Setting the Video Resolution

You can select the video resolution you want to use. Resolution options include: 1920 x 1080, 1280 x 1024, 800 x 600 and 640 x 480 (see *Table 4-1*, *Table 4-2*, *Table 4-3* and *Table 4-4*, below, for a complete list).

Table 4-1   PAL Dual Stream Resolution Options

MJPEG + H.264		H.264 + H.264	
H.264	**MJPEG**	**H.264-1**	**H.264-2**
1920 x 1080 (25 fps)	720 x 576 (25 fps), default	1920 x 1080 (25 fps)	720 x 576 (25 fps)
	640 x 480 (25 fps)		640 x 480 (25 fps)
	352 x 288 (25 fps)		352 x 288 (25 fps), default
1920 x 1080 (13 fps)	1920 x 1080 (13 fps)	1920 x 1080 (13 fps)	1920 x 1080 (13 fps)
	1280 x 1024 (25 fps)		1280 x 1024 (25 fps)
	1280 x 720 (25 fps)		1280 x 720 (25 fps)
	1024 x 768 (25 fps)		1024 x 768 (25 fps)
	800 x 600 (25 fps)		800 x 600 (25 fps)

Table 4-1 PAL Dual Stream Resolution Options (cont'd)

MJPEG + H.264		H.264 + H.264	
H.264	MJPEG	H.264-1	H.264-2
1280 x 1024 (25 fps)	1280 x 1024 (13 fps)	1280 x 1024 (25 fps)	1280 x 1024 (13 fps)
	1280 x 720 (25 fps)		1280 x 720 (25 fps)
	1024 x 768 (25 fps)		1024 x 768 (25 fps)
	800 x 600 (25 fps)		800 x 600 (25 fps)
	720 x 576 (25 fps)		720 x 576 (25 fps)
	640 x 480 (25 fps)		640 x 480 (25 fps)
	352 x 288 (25 fps)		352 x 288 (25 fps)
1280 x 720 (25 fps)	1280 x 720 (25 fps)	1280 x 720 (25 fps)	1280 x 720 (25 fps)
	1024 x 768 (25 fps)		1024 x 768 (25 fps)
	800 x 600 (25 fps)		800 x 600 (25 fps)
	720 x 576 (25 fps)		720 x 576 (25 fps)
	640 x 480 (25 fps)		640 x 480 (25 fps)
	352 x 288 (25 fps)		352 x 288 (25 fps)
1024 x 768 (25 fps)	1024 x 768 (25 fps)	1024 x 768 (25 fps)	1024 x 768 (25 fps)
	800 x 600 (25 fps)		800 x 600 (25 fps)
	720 x 576 (25 fps)		720 x 576 (25 fps)
	640 x 480 (25 fps)		640 x 480 (25 fps)
	352 x 288 (25 fps)		352 x 288 (25 fps)
800 x 600 (25 fps)	800 x 600 (25 fps)	800 x 600 (25 fps)	800 x 600 (25 fps)
	720 x 576 (25 fps)		720 x 576 (25 fps)
	640 x 480 (25 fps)		640 x 480 (25 fps)
	352 x 288 (25 fps)		352 x 288 (25 fps)
720 x 576 (25 fps)	720 x 576 (25 fps)	720 x 576 (25 fps)	720 x 576 (25 fps)
	640 x 480 (25 fps)		640 x 480 (25 fps)
	352 x 288 (25 fps)		352 x 288 (25 fps)
640 x 480 (25 fps)	640 x 480 (25 fps)	640 x 480 (25 fps)	640 x 480 (25 fps)
	352 x 288 (25 fps)		352 x 288 (25 fps)

Table 4-2   NTSC Dual Stream Resolution Options

MJPEG + H.264		H.264 + H.264	
H.264	**MJPEG**	**H.264-1**	**H.264-2**
1920 x 1080 (30 fps)	720 x 480 (30 fps), default	1920 x 1080 (30 fps)	720 x 480 (30 fps)
	640 x 480 (30 fps)		640 x 480 (30 fps)
	352 x 240 (30 fps)		352 x 240 (30 fps), default
1920 x 1080 (15 fps)	1920 x 1080 (15 fps)	1920 x 1080 (15 fps)	1920 x 1080 (15 fps)
	1280 x 1024 (30 fps)		1280 x 1024 (30 fps)
	1280 x 720 (30 fps)		1280 x 720 (30 fps)
	1024 x 768 (30 fps)		1024 x 768 (30 fps)
	800 x 600 (30 fps)		800 x 600 (30 fps)
1280 x 1024 (30 fps)	1280 x 1024 (15 fps)	1280 x 1024 (30 fps)	1280 x 1024 (15 fps)
	1280 x 720 (30 fps)		1280 x 720 (30 fps)
	1024 x 768 (30 fps)		1024 x 768 (30 fps)
	800 x 600 (30 fps)		800 x 600 (30 fps)
	720 x 480 (30 fps)		720 x 480 (30 fps)
	640 x 480 (30 fps)		640 x 480 (30 fps)
	352 x 240 (30 fps)		352 x 240 (30 fps)
1280 x 720 (30 fps)	1280 x 720 (30 fps)	1280 x 720 (30 fps)	1280 x 720 (30 fps)
	1024 x 768 (30 fps)		1024 x 768 (30 fps)
	800 x 600 (30 fps)		800 x 600 (30 fps)
	720 x 480 (30 fps)		720 x 480 (30 fps)
	640 x 480 (30 fps)		640 x 480 (30 fps)
	352 x 240 (30 fps)		352 x 240 (30 fps)
1024 x 768 (30 fps)	1024 x 768 (30 fps)	1024 x 768 (30 fps)	1024 x 768 (30 fps)
	800 x 600 (30 fps)		800 x 600 (30 fps)
	720 x 480 (30 fps)		720 x 480 (30 fps)
	640 x 480 (30 fps)		640 x 480 (30 fps)
	352 x 240 (30 fps)		352 x 240 (30 fps)
800 x 600 (30 fps)	800 x 600 (30 fps)	800 x 600 (30 fps)	800 x 600 (30 fps)
	720 x 480 (30 fps)		720 x 480 (30 fps)
	640 x 480 (30 fps)		640 x 480 (30 fps)
	352 x 240 (30 fps)		352 x 240 (30 fps)

Table 4-2   NTSC Dual Stream Resolution Options (cont'd)

MJPEG + H.264		H.264 + H.264	
H.264	**MJPEG**	**H.264-1**	**H.264-2**
720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)	720 x 480 (30 fps)
	640 x 480 (30 fps)		640 x 480 (30 fps)
	352 x 240 (30 fps)		352 x 240 (30 fps)
640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)	640 x 480 (30 fps)
	352 x 240 (30 fps)		352 x 240 (30 fps)

Table 4-3   PAL/NTSC MJPEG ONLY Stream Resolution Options

PAL MJPEG ONLY	NTSC MJPEG ONLY
1920 x 1080 (25 fps)	1920 x 1080 (30 fps)
1280 x 1024 (25 fps)	1280 x 1024 (30 fps)
1280 x 720 (25 fps)	1280 x 720 (30 fps)
1024 x 768 (25 fps)	1024 x 768 (30 fps)
800 x 600 (25 fps)	800 x 600 (30 fps)
720 x 576 (25 fps)	720 x 480 (30 fps)
640 x 480 (25 fps)	640 x 480 (30 fps)

Table 4-4   PAL/NTSC H.264 ONLY Stream Resolution Options

PAL H.264 ONLY	NTSC H.264 ONLY
1920 x 1080 (25 fps)	1920 x 1080 (30 fps)
1280 x 1024 (25 fps)	1280 x 1024 (30 fps)
1280 x 720 (25 fps)	1280 x 720 (30 fps)
1024 x 768 (25 fps)	1024 x 768 (30 fps)
800 x 600 (25 fps)	800 x 600 (30 fps)
720 x 576 (25 fps)	720 x 480 (30 fps)
640 x 480 (25 fps)	640 x 480 (30 fps)

To set the video resolution:

1. Click the **Streaming** tab (**Video Format** is selected in lefthand column).

2. In the **Video Resolution** drop-down list, select one of the following dual/single stream options:

   - **MJPEG + H.264**
   - **H.264 + H.264** (default)
   - **MJPEG Only**
   - **H.264 Only**

3. Based on your selection, the Streaming tab will display drop-down resolution selection lists for each video stream you have selected (see *Figure 4-1*). Use the drop-down list(s) to select the required resolution for the stream(s) you have selected. *Table 4-1*, *Table 4-2*, *Table 4-3*, and *Table 4-4* list the resolution options that are available for each video stream.

4. Click the **Save** button directly below the Video Resolution options.

Note   Image attachment by FTP or E-mail is only available when MJPEG streaming is selected.

Setting the Text Overlay

You can superimpose text over the video image. The superimposed text can be the date, the time, an event message, or a text string of your choosing (up to 20 alphanumeric characters). See *Figure 3-8* on *page 37* to see an example of the browser with the text overlay displayed on the video image.

To set the text overlay:

1. Click the **Streaming** tab (**Video Format** is selected in lefthand column).

2. Under **Text Overlay Settings**, select one or more of the following check boxes:

   - **Include date**
   - **Include text string**
   - **Include time**
   - **Event message**

3. If you selected the **Include text string** check box, type a text string in the corresponding text box (maximum 20-characters).

4. If you selected the **Event Message** check box, a message of M will appear overlayed on the video when a motion event occurs. A message of **A1**−**A4** will appear when an alarm 1−4 event occurs.

5. Click the **Save** button directly below the Text Overlay Settings options.

Setting the Video Rotate Type

Depending on the installation environment of your HDZ Series 1080p IP PTZ dome camera, you may need modify the way video is displayed on a monitor or web browser. The video rotate type options allow you to flip the video image vertically or horizontally, or rotate the video image, as needed.

To set the video rotate type:

1. Click the **Streaming** tab (**Video Format** is selected in lefthand column).

2. Under **Video Rotate Type**, select one of the following options from the drop-down list:

   - **Normal video** (default)
   - **Mirror video**
   - **180 degree rotate**
   - **Flip video**
   - **90 degree clockwise**
   - **90 degree counterclockwise**

3. Click the **Save** button directly below the Video Rotate Type drop-down list.

Setting the GOV Length

The GOV length of an H.264 stream is the sum total of I-frames and P-frames in a GOV (Group of video images). An I-frame, or intra frame, is an image that is coded in its entirety. A P-frame, or predictive inter frame, refers to parts of earlier images (I-frames and/or P-frames) to code the frame and therefore uses less bits to transmit the image. Increasing the GOV length decreases the frequency of I-frames, and therefore reduces bandwidth consumption and image quality.

To set the GOV length:

1. Click the **Streaming** tab (**Video Format** is selected in lefthand column).

2. Under **GOV Settings**, type a value in the **H.264-1 GOV Length** field and/or the **H.264-2 GOV Length** field.

Note	Enter a GOV Length value in the range from 2 to 64. The default value is 60 (NTSC), or 50 (PAL). The default value is a higher setting, which reduces the bandwidth consumption and also the image quality. Decrease this value if you require higher quality images, and bandwidth consumption is not an important consideration.

3. Click the **Save** button directly below the GOV Settings options.

Video Compression Settings

This section describes how to set the video quality, how to display the compression information on the home page, and how to enable Constant Bit Rate (CBR) mode.

Setting the Video Compression

You can set the compression level (or quality) for each type of video stream: Motion JPEG, H.264-1, and H.264-2. Higher bit rates produce higher quality images but require more bandwidth to transmit the images.

To set the MJPEG compression:

1. Navigate to **Streaming** ➤ **Video Compression** (see *Figure 4-2*).

2. Under **MJPEG Compression setting**, in the **MJPEG Q factor** field, type a value from 1 to 70 (default = 35).

The higher the value, the bit rate and image quality increases, and the load on bandwidth also increases.

3. Click the **Save** button directly below the MJPEG Compression setting options.

Figure 4-2   Video Compression Settings

To set the H.264-1 compression:

1. Navigate to **Streaming** ➤ **Video Compression**.

2. Under **H.264-1 Compression setting**, in the **H.264-1 bit rate** field, type a value from 64 to 4096 kbit/s (default = 4096 kbit/s).

   The higher the bit rate value, image quality increases, and the load on bandwidth also increases.

3. Click the **Save** button directly below the H.264-1 Compression setting options.

To set the H.264-2 compression:

1. Navigate to **Streaming** ➤ **Video Compression**.

2. Under **H.264-2 Compression setting**, in the **H.264-2 bit rate** field, type a value from 64 to 4096 kbit/s (default = 1024 kbit/s).

   The higher the bit rate value, image quality increases, and the load on bandwidth also increases.

3. Click the **Save** button directly below the H.264-2 Compression setting options.

Enabling Constant Bit Rate Mode

If you have a limited amount of bandwidth available, you should not set the bit rate for the camera to be more than the bandwidth available on your network (see *Setting the Video Compression on page 45*).

When the Constant Bit Rate mode (CBR) is enabled, the H.264 stream will keep the bit rate constantly at the level you have set (see *To set the H.264-1 compression:* above). When CBR is NOT enabled, the compression stream will use a variable bit rate (between 1 kbit/s and the bit rate you have set), depending on the amount of activity that is occurring in the image. If CBR is enabled and the compression bit rate is set low, the image quality will be reduced when a lot of activity occurs in the image.

| **Note** | Honeywell recommends that you set your bit rates below the available bandwidth levels of your network to avoid displaying/recording images at a reduced quality during moments of high activity. |

To enable Constant Bit Rate mode:

1. Navigate to **Streaming ➤ Video Compression**.
2. Under **CBR mode setting**, select one or more of the following:
   - **enable H.264-1 CBR mode** check box (enabled by default).
   - **enable H.264-2 CBR mode** check box (enabled by default).
3. Click the **Save** button directly below the CBR mode setting options.

Video OCX Protocol Settings

The Video OCX Protocol setting is used to select the Video Streaming Protocol for the camera. There are various options to transmit streaming video over the network (see *Table 4-5* on *page 48*). Choose the Video Streaming Protocol that best fits your viewing requirements and network properties (see *Figure 4-3*).

Figure 4-3   Video OCX Protocol Settings

Choose the video OCX protocol that best fits your data delivery requirements (see *Table 4-5*).

Table 4-5   Video OCX Protocol Options

OCX Option	Description
RTP over UDP (default)	Provides an up-to-date video stream although some images may be dropped. Suitable for both an intranet and the Internet where there is no NAT firewall.
RTP over RTSP (TCP)	Uses TCP for increased delivery reliability. Suitable for the Internet where firewalls are used and where an RTSP proxy is available.
RTSP over HTTP	Tunnels RTSP by means of HTTP. Able to pass through firewalls between the camera and the client.
MJPEG over HTTP	Streams a sequence of JPEG images by means of HTTP. Able to pass through firewalls between the camera and client.
Multicast mode	Provides the most efficient use of bandwidth when a large number of clients are viewing video simultaneously. Suitable for a subnet or intranet. Will not broadcast over the Internet.

To select an OCX protocol:

1. Navigate to **Streaming ➤ Video OCX Protocol**.

2. Under **Video OCX protocol setting**, select one of the following options:

   • **RTP over UDP** (default)   • **RTP over RTSP(TCP)**
   • **RTSP over HTTP**   • **MJPEG over HTTP**
   • **Multicast mode**

3. If you selected **Multicast mode**, enter the required information (IP address, video ports, audio port, and TTL) in the fields given.

4. Click **Save**.

Frame Rate Control Settings

If you have limited bandwidth available to transmit images, you can set up the number of image frames to be displayed per second with the Frame Rate control options (see *Figure 4-4*). NTSC versions support a frame rate from 1 to 30 fps. PAL versions support 1 to 25 fps.

Note	Be aware that video smoothness will change depending on the frame rate setting. Higher frame rates (30/25) will produce smooth video. Video smoothness will reduce at lower and lower frame rate values.

To set up frame rate control:

1. Navigate to **Streaming ➤ Frame Rate Control**.

2. Enter a frame rate setting for one or more of the following streams in the field given:

    *   **MJPEG**
    *   **H.264-1**
    *   **H.264-2**

    Enter a Frame Rate value from 1 to 30 (NTSC), or 1 to 25 (PAL).

3. Click the **Save** button directly below the Frame Rate setting field you have modified.

Figure 4-4   Frame Rate Control Settings

Audio Settings

This section describes how to set the audio transmission mode, gain, and bit rate (see *Figure 4-5*).

Figure 4-5   Streaming Audio Settings

Setting the Audio Transmission Mode

There are three audio transmission modes, plus the option for disabling audio (see *Table 4-6*).

Table 4-6   Audio Transmission Mode Settings

Transmission Mode	Description
Full-duplex (Talk and listen simultaneously)	The local and remote sites can transmit and receive audio (talk and listen) at the same time.
Simplex (Talk only)	The local or remote site can only talk to the PTZ site.
Simplex (Listen only)	The local or remote site can only listen to the PTZ site.
Disable (default)	Audio transmission is disabled.

To set the audio transmission mode:

1.   Navigate to **Streaming ➤ Audio**.

2.   Under **Transmission Mode**, select one of the following:

   •   **Full-duplex (Talk and listen)**   •   **Simplex (Talk only)**
   •   **Simplex (Listen only)**   •   **Disable**

3.   Click **Save**.

Setting the Audio Gain

You can adjust the volume of the audio input and output. To set the audio gain:

1.   Navigate to **Streaming ➤ Audio**.

2.   Under **Server Gain Setting**, in the **Input gain** and **Output gain** drop-down lists, select a value from **1** to **6**, or **Mute** (default = **3**). Select a higher value to increase the volume.

3.   Click **Save**.

Setting the Audio Bit Rate

You can adjust the audio transmission bit rate. Higher bit rates produce better audio quality but require more bandwidth.The G.726 speech codec is used with 16, 24, 32, and 40 kbit/s transmissions. The G.711 speech codec is used with u-law and A-law algorithms (64 kbit/s).

To set the audio bit rate:

1.   Navigate to **Streaming ➤ Audio**.

2.   In the **Bit Rate** drop-down list, select one of the following:

   •   **40 Kbps**   •   **32 Kbps**   •   **24 Kbps**
   •   **16 Kbps**   •   **uLAW** (64 Kbps),   •   **ALAW** (64 Kbps)
                                          default setting

3.   Click **Save**.

5

Configuring PTZ Settings

This chapter includes:

Preset Settings

You can program up to 256 preset points for the pan/tilt/zoom camera. A preset point is a pre-programmed position that your PTZ camera can move to automatically when a user selects a preset to go to.

Figure 5-1   PTZ Preset Programming
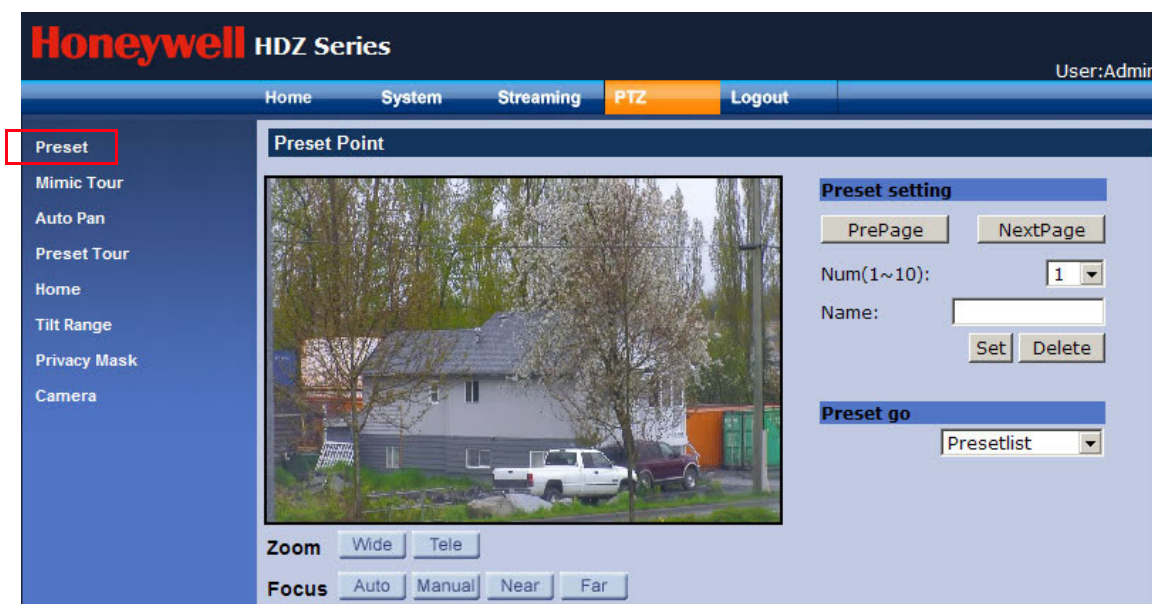
To program a preset point:

1. Navigate to **PTZ ➤ Preset** (see *Figure 5-1*).

2. In the Live View screen, click and drag the pointer to the desired preset position. To re-position the camera, place the mouse cursor over the video image and left-click and drag in the direction you want to move the camera. The red arrow icon ( ) indicates the direction that the image will pan/tilt.

3. Adjust the zoom and focus using the **Wide**, **Tele**, **Auto**, **Manual**, **Near**, and **Far** buttons.

4. Under **Preset setting**, in the **Num** drop-down list, select a number from the drop-down list for the current preset.

    The first drop-down list contains preset numbers 1 through 10. The next list contains numbers 11 through 20, and so on, up to 256. Click **NextPage** to go to the next list of preset numbers. Click **PrePage** to return to the previous list of numbers.

5. In the **Name** field, type a descriptive name for the current preset. The preset name can not contain any spaces.

6. Click **Set** to save the settings for the preset that you have programmed.

Note	You can also program a preset on the home page of the PTZ web client interface (see *Figure 3-6* on *page 34*). Use the PTZ controls (see *Figure 3-7* on *page 36*) and zoom and focus controls to position the camera at the desired preset position. Enter a preset number in the Preset Details field and click **Set**.

To delete a preset point:

1. Navigate to **PTZ ➤ Preset** (see *Figure 5-1*).

2. Under **Preset setting**, in the **Num** drop-down list, select the number of the preset that you want to delete.

    The first drop-down list contains preset numbers 1 through 10. The next list contains numbers 11 through 20, and so on, up to 256. Click **NextPage** to go to the next list of preset numbers. Click **PrePage** to return to the previous list of numbers.

3. Click **Delete** to delete the selected preset point.

To go to a preset point:

1. Navigate to **PTZ ➤ Preset** (see *Figure 5-1*).

2. Select the preset point you want to go to in the **Preset go** drop-down list.

    If the preset you want to go to does not appear in the drop-down list, click **NextPage** or **PrePage** in the **Preset setting** area until the correct preset list is selected.

| **Note**	You can also go to a preset on the home page of the PTZ web client interface (see *Figure 3-6* on *page 34*). Enter the preset number in the Preset Details field and click **Goto** to have the camera move to view the selected preset point.

Mimic Tour Settings

You can program up to eight mimic tours that can be recalled at a later time.

To program a mimic tour path:

1. Navigate to **PTZ ➤ Mimic Tour** (see *Figure 5-2*).

Figure 5-2   Mimic Tour Programming
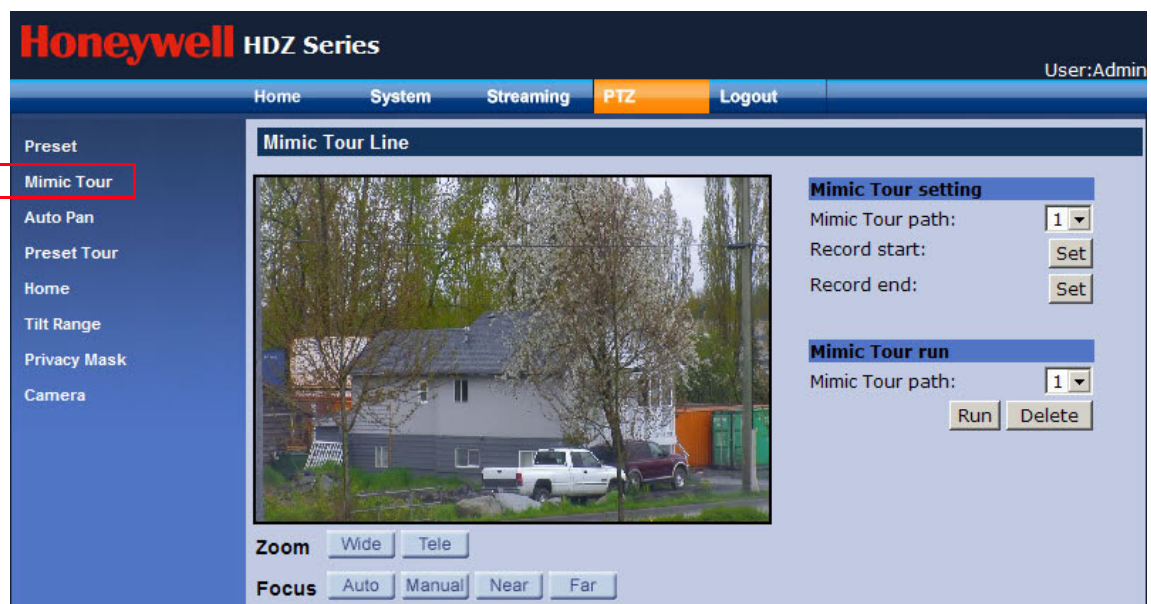
2. Under **Mimic Tour setting**, in the **Mimic Tour path** drop-down list, select the number of the Mimic Tour path that you want to program (select from **1** to **8**).

3. In the Live View screen, use the mouse to click and drag the video image to the start point of the mimic tour path. To re-position the camera, place the mouse cursor over the video image and left-click and drag in the direction you want to move the camera. The red arrow icon (⬅) indicates the direction that the image will pan/tilt.

4. Click the **Set** button located next to **Record start** to assign the current camera position as the mimic tour starting position.

5. Program the mimic tour path using the PTZ controls. Use the mouse to click and drag the image in the path that you want the tour to follow (see *step 3*, above). Use the zoom and focus controls to adjust the camera, as needed. When programming the tour, be sure to let the camera rest for a few seconds on the camera positions that should be monitored closely during the tour.

6. When you have finished programing the mimic tour path, click the **Set** button located next to **Record end** (see *Figure 5-2*).

To run a mimic tour path:

1. Navigate to **PTZ ➤ Mimic Tour**.

2. Under **Mimic Tour run**, in the **Mimic Tour path** drop-down list, type or select the number of the Mimic Tour path that you want to run, and then click **Run** (see *Figure 5-2*).

Note You can also run a mimic tour on the home page of the PTZ web client interface (see *Figure 3-6* on *page 34*). Select a mimic tour number from the Mimic Tour Details drop-down list and click **Run** to have the camera run the selected programmed mimic tour.

To stop running a mimic tour:

In the Live View screen, use the mouse to click and drag the pointer to move the camera in any direction, or click the Stop button located next to the mimic tour options on the Home screen (see *Figure 3-6* on *page 34*) to stop the tour.

To delete a programmed mimic tour:

1. Navigate to **PTZ ➤ Mimic Tour**.

2. Under **Mimic Tour run**, in the **Mimic Tour path** drop-down list, select the number of the Mimic Tour path that you want to delete, and then click **Delete** (see *Figure 5-2*).

Auto Pan Settings

You can program up to four auto pan paths. An auto pan path is a short tour that runs on a horizontal line, back and forth between two points that you program.
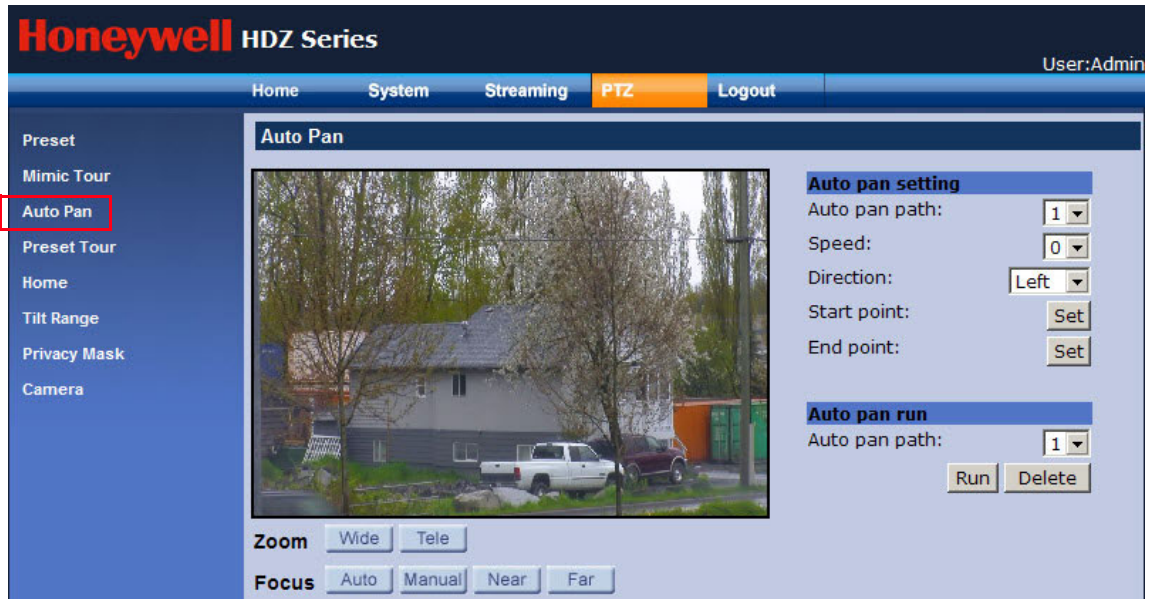
To program an auto pan path:

1. Navigate to **PTZ ➤ Auto Pan** (see *Figure 5-3*).

2. Under **Auto pan setting**, in the **Auto pan path** drop-down list, select the number of the auto pan path that you want to program (from **1** to **4**).

3. Under **Auto pan setting**, in the **Speed** drop-down list, type or select a speed ratio for the auto pan path from **0** (low) to **3** (fast).

4. In the Live View screen, use the mouse to click and drag the video image to the start point of the auto pan path. To re-position the camera, place the mouse cursor over the video image and left-click and drag in the direction you want to move the camera. The red arrow icon ( ) indicates the direction that the image will pan/tilt.

   Use the zoom and focus controls, as needed, to adjust the zoom and focus of the image.

5. Click the **Set** button located next to **Start point** (see *Figure 5-3*).

Figure 5-3   Auto Pan Programming

6. In the **Direction** drop-down list, select a direction for the auto pan path to run (**Left** or **Right**).

7. In the Live View screen, use the mouse to click and drag the video image to the end point of the auto pan path, and then click the **Set** button located next to **End point**.

To run an auto pan path:

1. Navigate to **PTZ ➤ Auto Pan** (see *Figure 5-3*).

2. Under **Auto pan run**, in the **Auto pan path** drop-down list, select the number of the auto pan path that you want to run (from **1** to **4**), and then click **Run**.

To stop running an auto pan path:

In the Live View screen, use the mouse to click and drag the pointer to move the camera in any direction to stop auto panning.

To delete an auto pan path:

1. Navigate to **PTZ ➤ Auto Pan** (see *Figure 5-3*).

2. Under **Auto pan run**, in the **Auto pan path** drop-down list, select the number of the auto pan path that you want to delete (from **1** to **4**), and then click **Delete**.

Preset Tour Settings

You can program up to eight preset tours that can consist of between 2 and 64 preset points in each tour.

> **Note** You must define at least two presets before you can program a preset tour. See *Preset Settings on page 53* for more information on programming preset points.

To program a preset tour:

1. Navigate to **PTZ ➤ Preset Tour**.
2. Under **Preset Tour setting**, click **Edit** (see *Figure 5-4*). The Preset Tour Set window opens (see *Figure 5-5*).

Figure 5-4   Preset Tour Programming
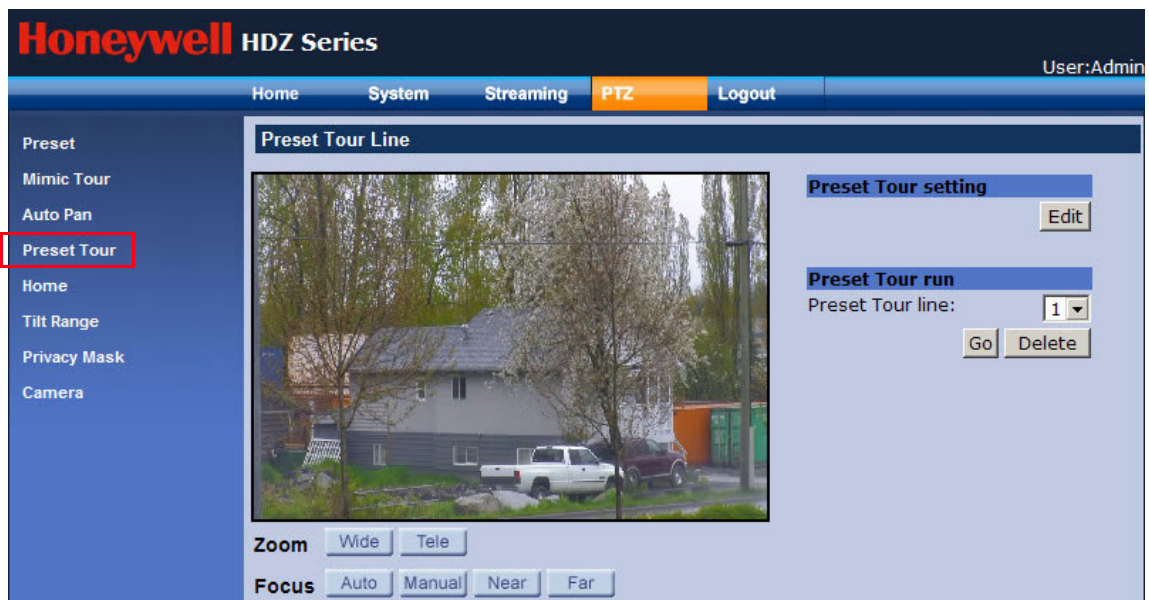
3. On the **Preset Tour Set** page (*Figure 5-5*), in the **Preset Tour line** drop-down list, select the number of the preset tour that you want to program (from **1** to **8**).
4. For each preset that you want to assign to the preset tour, do the following:

   a. In the **Name** drop-down list, select the name of the preset point to be part of the tour (see *Figure 5-5*).

   b. In the **Dwell time** box, type a value from **0** (fast dwell time) to **127** (slow dwell time).

   c. In the **Speed** box, type a value from **0** (low speed) to **14** (high speed).

To assign more preset points than the first 15 to the preset tour, click **Next page**. To return to the previous page, click **Pre page**.

Figure 5-5   Preset Tour Selecting Preset Points

5.   When you are finished, click **Save** to save the preset tour settings that you have entered.

To run a preset tour:

1.   Navigate to **PTZ ➤ Preset Tour** (see *Figure 5-4*).

2.   Under **Preset Tour run**, in the **Preset Tour line** drop-down list, select the number of the preset tour line that you want to run (from **1** to **8**), and then click **Go**.

Note   You can also run a preset tour on the home page of the PTZ web client interface (see *Figure 3-6* on *page 34*). Select a preset tour number from the Preset Tour Details drop-down list and click **Run** to have the camera run the selected programmed preset tour.

To stop running a preset tour:

In the Live View screen, use the mouse to click and drag the pointer to move the camera in any direction, or click the Stop button located next to the preset tour options on the Home screen (see *Figure 3-6* on *page 34*) to stop the tour.

To delete a programmed preset tour:

1. Navigate to **PTZ ➤ Preset Tour**.
2. Under **Preset Tour run**, in the **Preset Tour line** drop-down list, select the number of the Preset Tour that you want to delete, and then click **Delete** (see *Figure 5-4*).

Home Function

The home function ensures constant and consistent monitoring by preventing the camera from idling for more than a set period of time. When the home function is enabled, the camera automatically executes a user-defined PTZ function after a specific period of inactivity.

To program the home function:

1. Navigate to **PTZ ➤ Home** (see *Figure 5-6*).

Note   Be aware that you must enable the home function for your programmed home function to be in effect (see *page 61*).

---

2. Under **Home setting**, in the **Time** field, type a value from **1** to **128** minutes to set the camera idle time limit (period of inactivity before the home function executes).
3. In the **Type** drop-down list, select the PTZ function you want the camera to execute when the camera idle time expires. Choose one of the following options:

    *   **Preset**   *   **Preset Tour**
    *   **Autopan**   *   **Mimic Tour**

4. In the **Line** drop-down list, type or select the number of the PTZ function that you have chosen. The functions available for selection change depending on what Function **Type** is selected (see *step 3*).
5. Click the **Set** button located below the **Line** field to save the settings that you have entered for the Home Function.

Figure 5-6   Home Function Programming
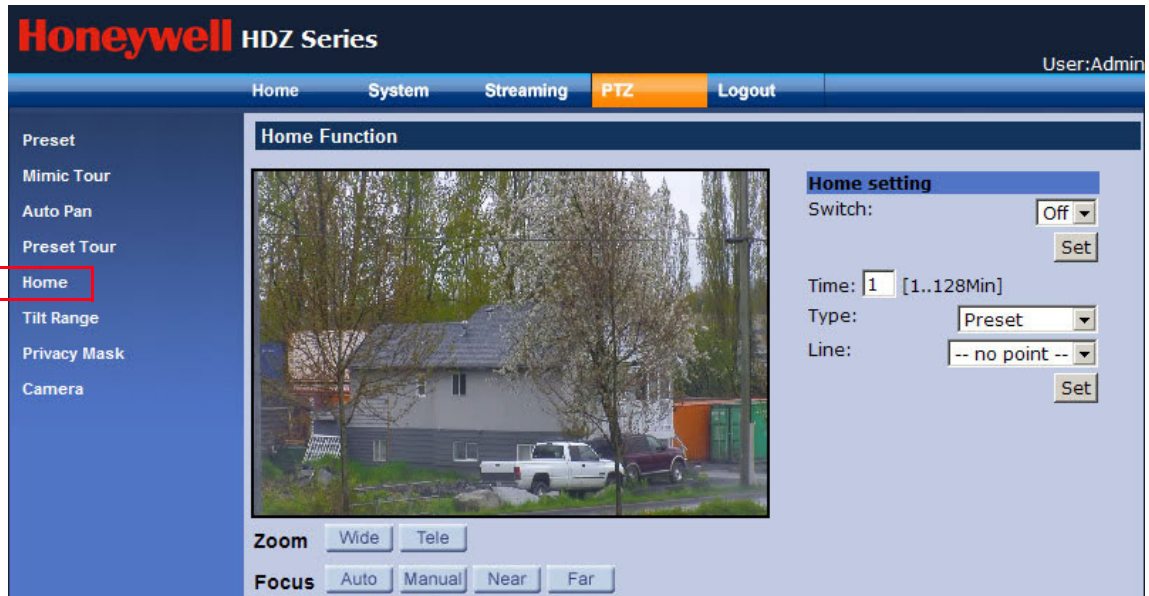
To enable or disable the home function:

1. Navigate to **PTZ ➤ Home** (see *Figure 5-6*).

2. Under **Home setting**, in the **Switch** drop-down list, select one of the following:

    • **On** to enable the home function.

    • **Off** to disable the home function.

3. Click the **Set** button located below the **Switch** field to save the settings that you have entered for the Home Function.

Tilt Range Settings

The camera's tilt angle is adjustable from minimum –10° to maximum 100°.
For more information, see *Image Flip on page 69*.

To adjust the tilt angle:

1. Navigate to **PTZ ➤ Tilt Range** (see *Figure 5-7*).

2. Under **Angle Setting**, in the **Min** field, type a value from **–10** to **10**. The default value is 0.

3. In the **Max** field, type a value from **80** to **100**. The default value is 90.

> **Note**   When you select Image Flip from the PTZ ➤ Camera ➤ Flip, the Max field value range will be from 170 to 190. Default value is 180.

4.   Click **Set** to save the settings that you have entered for the Tilt Angle.

Figure 5-7   Tilt Angle Programming
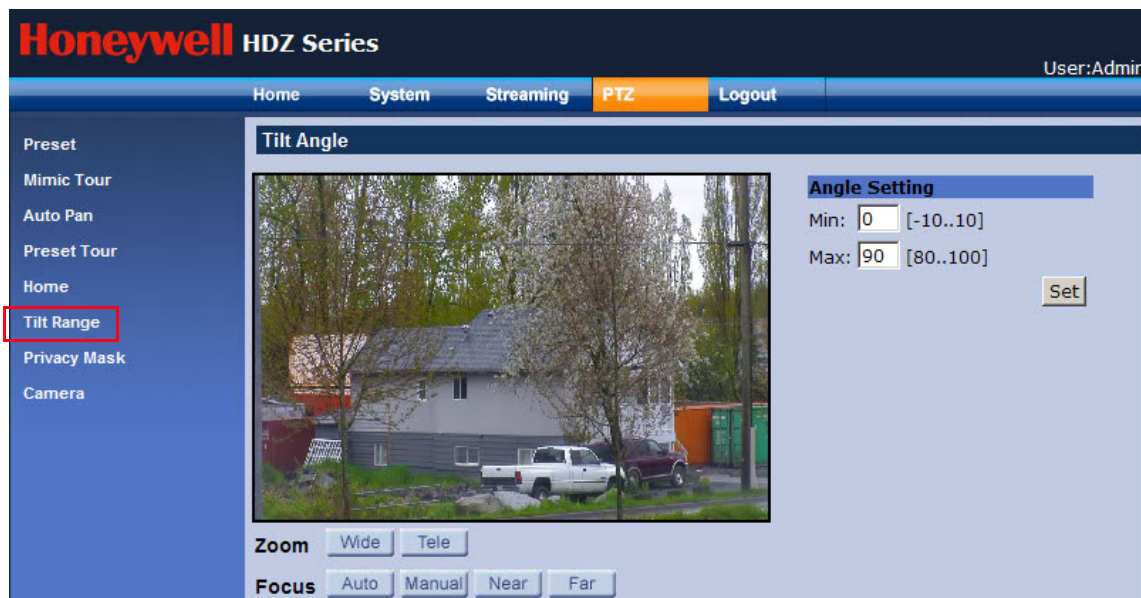
Privacy Mask Settings

The privacy mask function prevents the camera from monitoring sensitive objects or areas in a scene.

> **Note**   The image flip function is automatically disabled when the privacy mask function is enabled. However, the M.E. image flip function (mechanical image flip function) can be used when the privacy masks function is enabled (see *Image Flip on page 69* for more information).

To create a privacy mask:

1.   Navigate to **PTZ ➤ Privacy Mask** (see *Figure 5-8*).

2. Under **Mask Setting**, in the **Switch** drop-down list, select **On** to enable the privacy mask function (or select **Off** to disable the privacy mask feature), and then click the **Set** button located directly below the drop-down list.

3. In the **Transparency** drop-down list, select one of the following:

   • **On** to make the privacy mask transparent.

   • **Off** to make the privacy mask solid.

4. In the **Color** drop-down list, select a color for the privacy mask (**Black**, **White**, **Red**, **Green**, **Blue**, **Cyan**, **Yellow**, and **Magenta**), and then click the **Set** button located directly below the **Color** drop-down list.

Figure 5-8   Privacy Mask Programming

5. In the Live View screen, use the mouse to click and drag the video image to the video position to be masked for privacy. To re-position the camera, place the mouse cursor over the video image and left-click and drag in the direction you want to move the camera. The red arrow icon ( ) indicates the direction that the image will pan/tilt. When you add the privacy mask (see *step 9*), the privacy mask will be added to the center of this image.

6. In the **Mask** field, type a number for the privacy mask you are programming (from **1** to **16**).

7. In the **Hsize** field, type a value for the horizontal size (width) of the privacy mask (from **1** to **80**). Select a large number to program a larger privacy mask.

8. In the **Vsize** field, type a value for the vertical size (height) of the privacy mask (from **1** to **60**). Select a large number to program a larger privacy mask.

9. Click **Add** to apply the privacy mask settings that you have entered.

To edit a privacy mask position:

1. Navigate to **PTZ ➤ Privacy Mask** (see *Figure 5-8*).

2. Under **Mask Setting**, in the **Mask** field, type a number for the privacy mask you are editing (from **1** to **16**).

3. If needed, you can change the **Transparency**, **Color**, **Hsize** and **Vsize** values to edit the privacy mask. If you edit one or more of these values, be sure to click the appropriate Set or Add button to save the changes (see *To create a privacy mask: on page 62* for more information).

4. To change the privacy mask position, click **Edit Start** at the bottom of the **Mask Setting** section. The PTZ camera will pan/tilt to the privacy mask position that you have previously set. The edit privacy mask position controls will appear (see *Figure 5-9*).

Figure 5-9   Privacy Mask Editing Position Controls

5. Click one of either the left, right, up or down arrows to move the camera and the privacy mask in that direction.

6. You can change the amount that the camera pans/tilts upon each click of an arrow by typing a different value in the **PT Steps** field. Enter a value between **1** (short distance pan/tilt) and **30** (long distance pan/tilt).

7. When the privacy mask is positioned and setup as required, click **Edit End** at the bottom of the **Mask Setting** section.

Note   Up to a 10 second delay may occur between completion of editing a privacy mask position and the **Edit End** button becoming available.

To delete a privacy mask:

1. Navigate to **PTZ ➤ Privacy Mask** (see *Figure 5-8*).

2. Under **Mask Clearing**, in the **Mask** drop-down list, select the number of the privacy mask that you want to delete, and then click **Clear**.

Note   If you are clearing all privacy masks, it is recommended that you also disable the privacy mask feature (see *step 2* in *To create a privacy mask:, page 62*).

Camera Settings

This section describes how to set various camera parameters, such as exposure mode, white balance options, backlight compensation, image flip, auto calibration, speed by zoom, ICR function, wide dynamic range, and digital noise reduction.

Exposure

You can select a specific Max Gain value, as needed. You can select one of the following exposure modes to optimize the video output for your operating environment:

Table 5-1   Exposure Modes

Mode	Description
Full Auto	The camera's shutter speed, iris, and auto gain control (AGC) circuits work together automatically to produce a consistent video output.
Shutter Priority	The shutter speed has priority in setting the camera exposure.
Iris Priority	The iris has priority in setting the camera exposure.
Manual Mode	The shutter speed, iris, and gain are set manually by the user.

Figure 5-10   Exposure Mode Programming
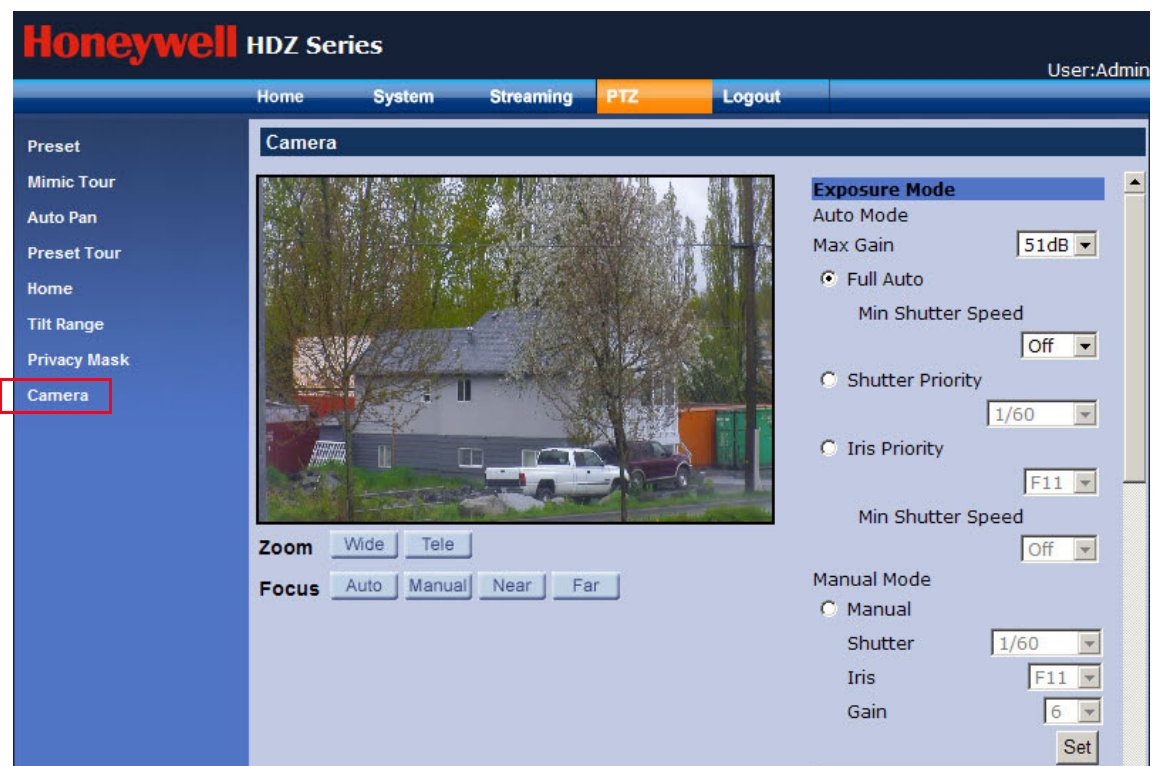
To set a max gain value:

Note   The gain limit can be set at the Full Auto, Shutter Priority, Iris Priority in the AE mode. Use this setting when image signal-to-noise ratio is particularly important.

---

1. Navigate to **PTZ ➤ Camera** (see *Figure 5-10*).

2. Under **Exposure Mode**, use the **Max Gain** drop-down list to select a max gain value for the camera (from **3dB** to **57dB**, or **Off**).

3. Click **Set** to save the max gain value you have selected.

To set the exposure mode:

1. Navigate to **PTZ ➤ Camera** (see *Figure 5-10*).

2. Under **Exposure Mode**, select one of the following:

   • **Full Auto** to enable full auto exposure mode. Select the Minimum Shutter Speed from the drop-down list below the Full Auto selection.

   • **Shutter Priority** to enable shutter priority exposure mode. Select a shutter speed from **1**/**10000** to **1**/**30** (NTSC), or **1**/**10000** to **1**/**25** (PAL) in the drop-down list provided.

   • **Iris Priority** to enable iris priority exposure mode. Select an F-number from **F1.6** to **F28** in the drop-down list provided (hint: a smaller f-number will give you a brighter image). If Iris Priority is selected, you can select a **Min Shutter Speed** value from the drop-down list provided.

   • **Manual Mode** to enable manual exposure mode. Select shutter (**1**/**10000** to **1**/**30**, NTSC; **1**/**10000** to **1**/**25**, PAL), gain (**1** to **15**), and iris (**F1.6** to **F28**) values in the corresponding drop-down lists.

3. Click **Set** to save the exposure settings that you have entered.

White Balance

Setting up white balance options can compensate for temperature differences with different light sources (such as sunlight, fluorescent light, and so on), and effecting the hue of the color white under different light sources. You can select one of the following white balance modes based on your operating environment:

Table 5-2   White Balance Modes

Mode	Description
Auto	Suitable for environments with a color temperature range from approximately 2,700K to 7,500K (wide range of light sources).
Indoor	Suitable for indoor environments with a color temperature range from approximately 2,500K to 3,000K (artificial light sources).
Outdoor	Suitable for outdoor environments with a color temperature range from approximately 6,000K to 8,000K (natural light sources).
ATW	Suitable for environments with a color temperature range from approximately 2,500K to 10,000K (wide range of light sources).
Manual	R (red) and B (blue) gain values are set manually by the user.

To set the white balance mode:

1. Navigate to **PTZ ➤ Camera**.
2. Under **White balance** (see *Figure 5-11*), select one of the following:
    - **Auto** to enable auto white balance mode.
    - **Indoor** to enable indoor white balance mode.
    - **Outdoor** to enable outdoor white balance mode.
    - **ATW** to enable auto tracing white balance mode.
    - **Manual** to enable manual white balance mode, and enter gain values from **0** to **255** in the **Rgain** and **Bgain** fields.
3. Click **Set** to save the white balance settings that you have entered.

Figure 5-11   Camera White Balance and Other Options
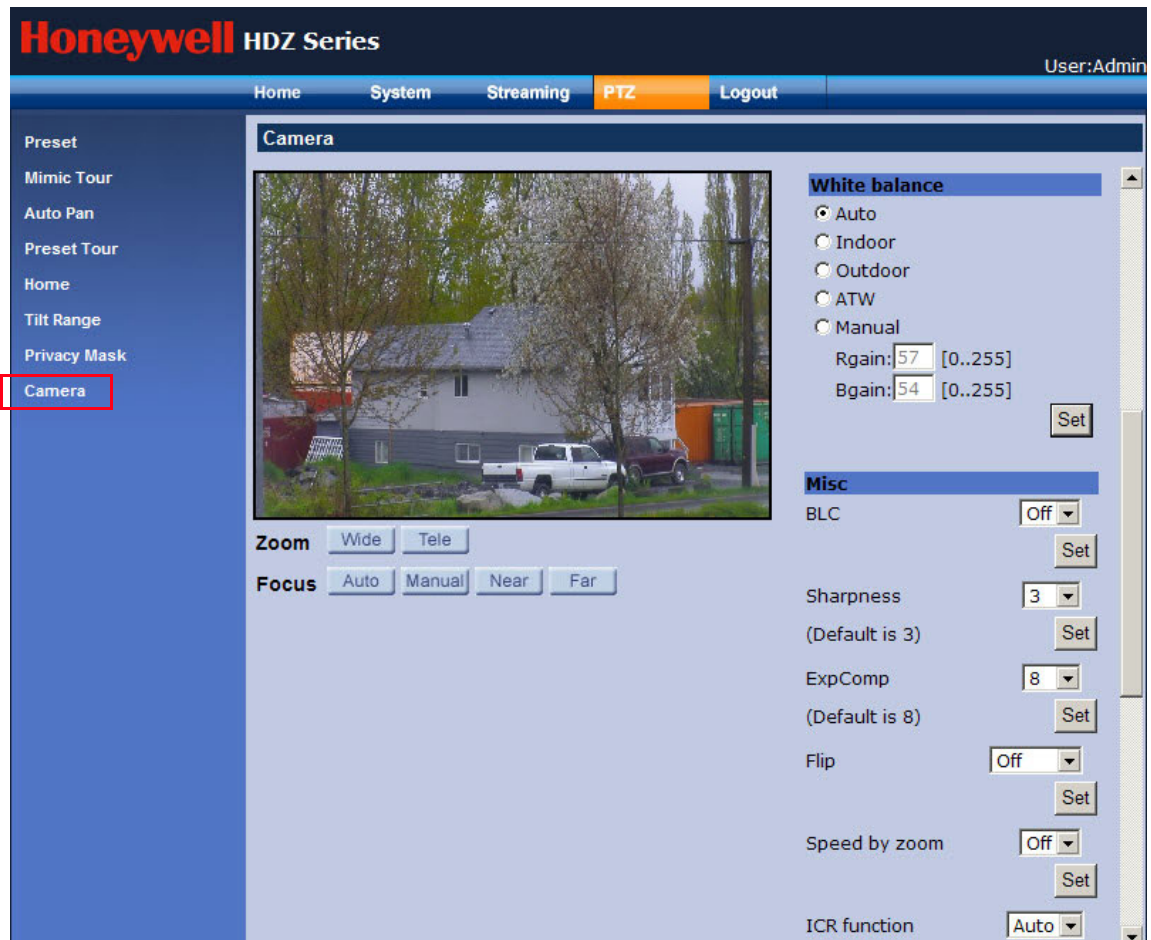
Backlight Compensation

You can enable or disable backlight compensation. When enabled, the camera software will automatically compensate for high background lighting.

To enable/disable backlight compensation:

1. Navigate to **PTZ ➤ Camera**.
2. Under **Misc** (see *Figure 5-11*), in the **BLC** drop-down list, select one of the following:
   - **On** to enable backlight compensation.
   - **Off** (default) to disable backlight compensation.
3. Click **Set** to save the setting.

Image Sharpness

You can adjust the sharpness level of the image:

1. Navigate to **PTZ** ➤ **Camera**.

2. Under **Misc** (see *Figure 5-11*), in the **Sharpness** drop-down list, type or select a value from **1** (least sharp) to **15** (sharpest) for the camera sharpness level (default is **3**).

3. Click **Set** to save the setting.

Exposure Compensation

You can adjust the exposure compensation level:

1. Navigate to **PTZ** ➤ **Camera**.

2. Under **Misc** (see *Figure 5-11*), in the **ExpComp** drop-down list, type or select a value from **1** to **15** for the camera exposure compensation level (default is **8**).

3. Click **Set** to save the setting.

Image Flip

The image flip function lets you track an object continually as it passes directly beneath the camera. You can select one of the following image flip modes:

Table 5-3   Image Flip Modes

Mode	Description
M.E.	M.E. mode employs a mechanical image flip. As the camera tracks an object passing underneath it, it tilts down to the maximum tilt angle, quickly pans 180°, and then tilts upward to continue tracking the object.
Image	Image mode employs a digital image flip. As the camera tracks an object passing underneath it, it tilts down to the maximum tilt angle, reverses the image digitally, and then tilts upward to continue tracking the object.
Off (default)	Disable image flip mode.

To set the image flip mode:

1. Navigate to **PTZ** ➤ **Camera**.

2. Under **Misc** (see *Figure 5-11*), in the **Flip** drop-down list, select one of the following:

   • **M.E.** to enable the mechanical image flip mode.

   • **Image** to enable the digital image flip mode.

   • **Off** (default) to disable the image flip function.

3. Click **Set** to save the setting.

Note   This image flip function is automatically disabled when the privacy mask function is enabled. However, the M.E. image flip function (mechanical image flip function) can be used when the privacy mask function is enabled (see *Privacy Mask Settings on page 62* for more information).

> **Note** Flip setting is manually controlled ONLY. If a preset position or point for another function (such as mimic tour) is set in a position that can only be reached through Flip motion, that position can not be reached when the Flip function is disabled.

Speed by Zoom

The speed by zoom function lets you view objects clearly while zooming in. As the camera zooms in, the pan and tilt speed slow proportional to the amount of zoom, causing the scene to remain in focus throughout zooming.

Enable this function to adjust the pan/tilt speed automatically by internal algorithm when zooming. The larger zoom ratio leads to a lower rotating speed.

To enable/disable the speed by zoom function:

1. Navigate to **PTZ ➤ Camera**.
2. Under **Misc** (see *Figure 5-11*), in the **Speed by zoom** drop-down list, select one of the following:
   - **On** to enable the speed by zoom function.
   - **Off** (default) to disable the speed by zoom function.
3. Click **Set** to save the setting.

ICR Function

The ICR (IR Cut Removable) function produces clear, accurate images at night or in low-light conditions. During the day, the camera uses an IR cut filter to filter out infrared (IR) light to ensure an undistorted color picture. At night, or in low light, the IR cut filter is removed, allowing the camera to make use of IR light to deliver high-quality black-and-white images. You can select one of the following ICR modes:

Table 5-4   ICR Modes

Mode	Description
Auto (default)	The IR cut filter is removed automatically when the image brightness drops below a certain level.
On	Removes the IR cut filter.
Off	Leaves the IR cut filter in place.

To set the ICR mode:

1. Navigate to **PTZ ➤ Camera**.

2. Under **Misc** (see *Figure 5-12*), in the **ICR function** drop-down list, select one of the following:

- **Auto** (default) to remove the IR cut filter automatically.

- **On** to remove the IR cut filter manually.

- **Off** to leave the IR cut filter in place.

3. Click **Set** to save the setting.

Figure 5-12   Camera Misc. Options
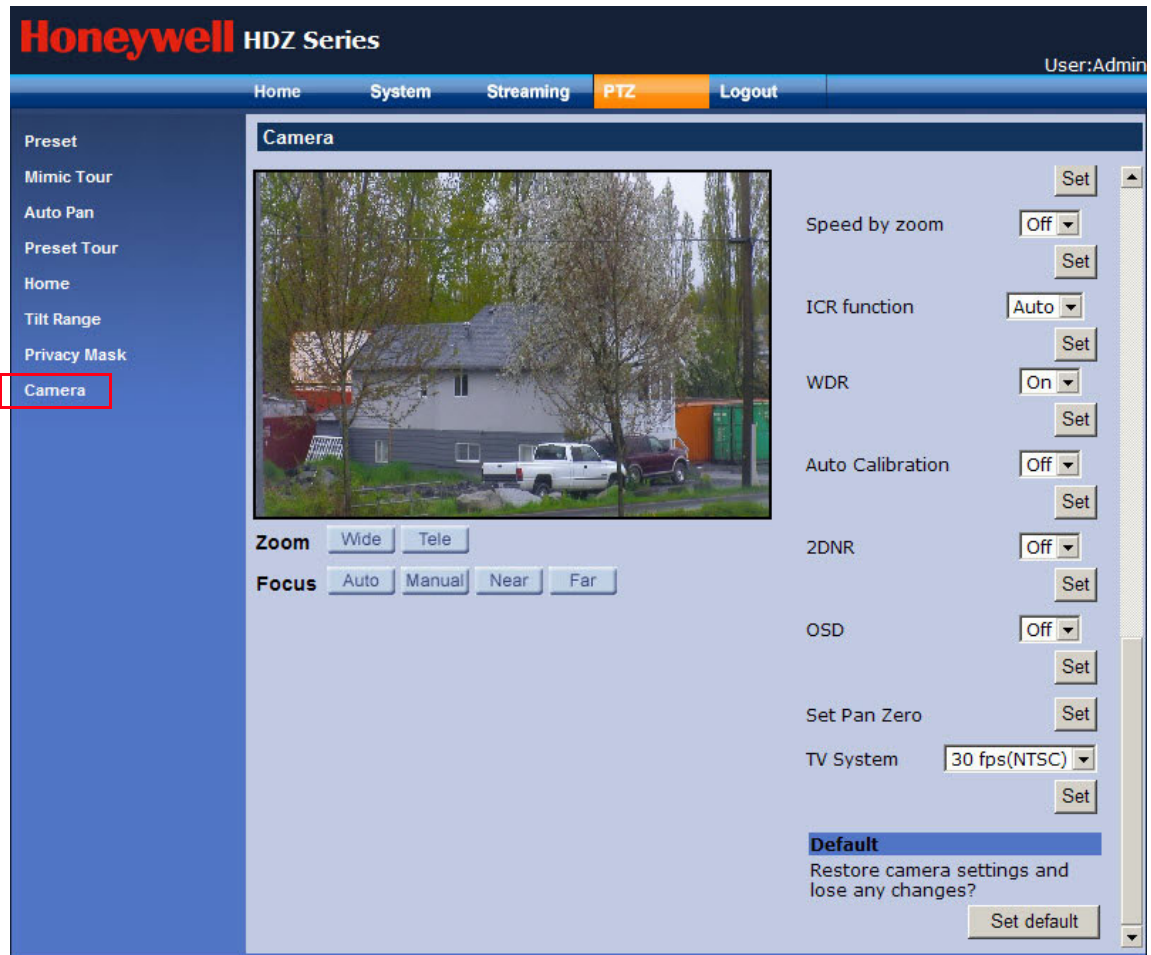
Wide Dynamic Range

The wide dynamic range (WDR) function produces balanced, evenly lit images when extremely bright or extremely dark areas are present in a scene.

To enable/disable wide dynamic range:

1. Navigate to **PTZ ➤ Camera**.

2. Under **Misc** (see *Figure 5-12*), in the **WDR** drop-down list, select one of the following:

   • **On** to enable wide dynamic range.

   • **Off** (default) to disable wide dynamic range.

3. Click **Set** to save the setting.

Auto Calibration

When the auto calibration function is enabled, the image is calibrated automatically whenever a deviation in the camera pivot is detected.

To enable/disable auto calibration:

1. Navigate to **PTZ ➤ Camera**.

2. Under **Misc** (see *Figure 5-12*), in the **Auto calibration** drop-down list, select one of the following:

   • **On** to enable auto calibration.

   • **Off** (default) to disable auto calibration.

3. Click **Set** to save the setting.

2D Noise Reduction

2-dimensional noise reduction (2DNR) reduces image noise produced in low-light conditions. 2D noise reduction technology reduces noise by maintaining smooth edges on moving objects.

To enable/disable 2D noise reduction:

1. Navigate to **PTZ ➤ Camera**.

2. Under **Misc** (see *Figure 5-12*), in the **2DNR** drop-down list, select one of the following:

   • **On** to enable noise reduction.

   • **Off** (default) to disable noise reduction.

3. Click **Set** to save the setting.

On Screen Display

The on-screen display function (OSD) can be enabled to provide the user with directional information for the focal point that the PTZ camera is facing. OSD information will include the compass point that the camera is facing (North, South, East or West) and the zoom ratio that the camera is currently using. The OSD will also provide the degrees that the camera is facing, on both vertical and horizontal axes of rotation. See *Figure 3-8* on *page 37* to see an example of the browser with the on-screen display showing the PTZ information on the video image.

To enable/disable on-screen display:

1. Navigate to **PTZ ➤ Camera**.
2. Under **Misc** (see *Figure 5-12*), in the **OSD** drop-down list, select one of the following:
   - **On** to enable the on-screen display.
   - **Off** (default) to disable the on-screen display.
3. Click **Set** to save the setting.

Set Pan Zero

Click **Set** to set the pan setting to zero at the current PTZ camera position. Setting pan to zero will set the current PTZ camera position as North. This setting will affect the direction information that is displayed on the OSD (see *On Screen Display on page 72* for more information).

TV System

Depending on the location that you are using the HDZ Series 1080p IP PTZ camera, you may need to switch the TV System settings between PAL/NTCS. Generally, systems in North America use NTSC and systems in Europe use PAL. If this unit was purchased in a PAL region, the camera should be set to PAL by default. If this unit was purchased in an NTSC region, the camera should be set to NTSC by default. Check with the system administrator if you are unsure what setting to use at your location.

To switch the TV system setting:

1. Navigate to **PTZ ➤ Camera**.
2. Under **Misc** (see *Figure 5-12*), in the **TV System** drop-down list, select one of the following:
   - **30 fps(NTSC)** to use the North American TV system setting. This is the default setting if the camera is the NTSC model.
   - **25 fps(PAL)** to use the European TV system setting. This is the default setting if the camera is the PAL model.
3. Click **Set** to save the setting.

Restore Defaults

You can undo any changes that you have made to the camera settings and restore the camera to its factory default settings. See also *Restoring Factory Defaults on page 111*.

To restore the camera default settings:

1. Navigate to **PTZ ➤ Camera**.
2. Under **Default**, click **Set default** (see *Figure 5-12*).

6

Configuring Alarms

This chapter includes:

Alarm Server Settings

The HDZ Series 1080p IP PTZ dome camera supports four alarm inputs and two alarm outputs. Ensure that the alarm connections are properly wired before configuring alarm-related settings on the camera (see *Connecting Alarm Inputs/Outputs on page 26* for more information).

Server Settings

You can set up the camera to send a message to an FTP, email (SMTP), or HTTP server, or to upload images to an FTP server or email server when an alarm is triggered. You can configure up to two servers of each type.

To enable email alarm notifications:

1. Navigate to **System ➤ Mail** (see *Figure 6-1*).

2. Under **SMTP**, enter the server name, port, account name, password, and recipient email address for each server.

Note   Contact your network administrator for the needed SMTP values if you do not have them at hand.

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3. You can select the check box for either the **1st SMTP SSL** or **2nd SMTP SSL** options to enable more secure email transmission for the alarm messages.

4. Enter a email address to be appointed as sender in the **Sender email address** field.

5. Click **Save** to save your mail server settings.

Figure 6-1   Setup Mail Server

To enable FTP alarm notifications:

1. Navigate to **System ➤ FTP**.

2. Under **FTP**, enter the server name, port, user name, password, and remote folder for each server (see *Figure 6-2*).

3. To enable passive mode, select the **1st FTP passive mode** check box and/or the **2nd FTP passive mode** check box.

4. Click **Save** to save your FTP server settings.

Figure 6-2 Setup FTP Server

To enable HTTP alarm notifications:

1. Navigate to **System ➤ HTTP** (see *Figure 6-3*).

2. Under **HTTP**, enter the server name, user name, and password for each server, and then click **Save**.

Figure 6-3 Setup HTTP Server

Alarm Input Settings

The alarm input settings are configured in the **Alarm Application** section of the **System** tab. Each alarm input must be configured separately. Select the alarm input you want to configure, set the switch to on or off, specify the type (normally open or normally closed), and specify what actions you want the camera to perform when the selected alarm is triggered (see the following sections for more information).

Figure 6-4   Alarm Application Settings
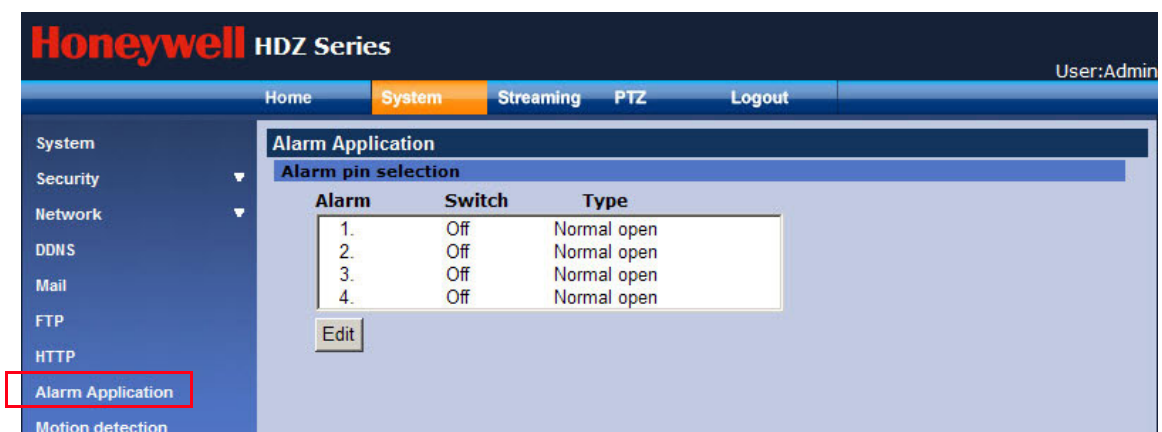
Selecting an Alarm Input to Configure

Select an alarm input to begin configuring the alarm settings.

1. Navigate to **System ➤ Alarm Application** (see *Figure 6-4*).

2. Under **Alarm pin selection**, select the alarm input you want to configure, and then click **Edit**.

Setting the Alarm Status and Type

You can set the alarm switch to on or off and specify the alarm type based on whether the switch is "normally open" or "normally closed".

1. Under **Alarm setting** (see *Figure 6-5*), in the **Alarm switch** drop-down list, select one of the following:

    • **On** to enable the alarm.

    • **Off** to disable the alarm.

2. In the **Alarm type** drop-down list, select one of the following:

    • **Normal open** (for the alarm to trigger when the contact is closed).

    • **Normal close** (for the alarm to trigger when the contact is opened).

Figure 6-5   Alarm Input Parameters

Setting the Alarm Actions

You can specify what actions you want the camera to perform when the selected alarm is triggered. You can select more than one action. See the following sections for more information.

To enable alarm relay output:

Under **Triggered action** (see *Figure 6-5*), select one or both of the **Enable alarm output 1** and **Enable alarm output 2** check boxes.

To send a message to an FTP/email server that you have configured:
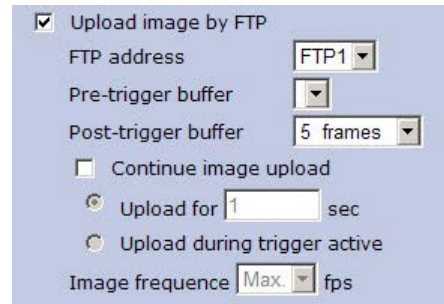
Under **Triggered action**, select one or both of the following:

• The **Send message by FTP** check box to send the message to the FTP server (see *Server Settings on page 75* for information on setting up an FTP server).

• The **Send message by E-Mail** check box to send the message to the mail server (see *Server Settings on page 75* for information on setting up an email server).

To upload images to an FTP server that you have configured:

1. Under **Triggered action**, select the **Upload image by FTP** check box. The FTP options will appear below the check box (see *Figure 6-6*).

Figure 6-6   Upload Image by FTP Options
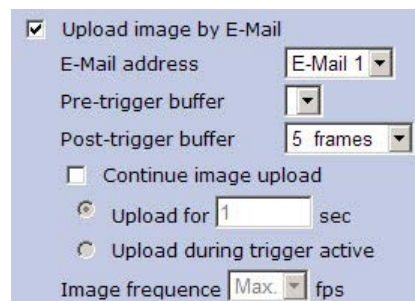
2. In the **FTP address** drop-down list, select either **FTP1** or **FTP2** (see *To enable FTP alarm notifications: on page 76* for information on setting up an FTP address).

3. In the **Pre-trigger buffer** drop-down list, select the number of pre-trigger frames/images (1 to 20) to send to the server. This option sets the amount of images from before an alarm is triggered that will be uploaded by FTP. The default setting is 5.

4. In the **Post-trigger buffer** drop-down list, select the number of post-trigger frames/images (1 to 20) to send to the server.

5. To continue to upload images to the server for a specified time, or until the alarm ends, select the **Continue image upload** check box, and choose one of the following:

   • Select **Upload for [number] sec** and enter a value from **1** to **9999** seconds.

   • Select **Upload during trigger active**.

   Whichever option you select, you can also select how frequent the images should be uploaded to the FTP server in the **Image frequence [number] fps** drop-down list. Select an fps (frames per second) value from **1** to **15** fps, or select **Max** fps.

To upload images to an email server that you have configured:

1. Under **Triggered action**, select the **Upload image by E-Mail** check box. The email options will appear below the check box (see *Figure 6-7*).

Figure 6-7   Upload Image by E-Mail Options

2. In the **E-Mail address** drop-down list, select either **E-Mail 1** or **E-Mail 2** (see *To enable email alarm notifications: on page 75* for information on setting up an email address).

3. In the **Pre-trigger buffer** drop-down list, select the number of pre-trigger frames/images (1 to 20) to send to the server. This option sets the amount of images from before an alarm is triggered that will be uploaded by e-mail. The default setting is 5.

4. In the **Post-trigger buffer** drop-down list, select the number of post-trigger frames/images (1 to 20) to send to the server.

5. To continue to upload images to the server for a specified time, or until the alarm ends, select the **Continue image upload** check box, and choose one of the following:

   • Select **Upload for [number] sec** and enter a value from **1** to **9999** seconds.

   • Select **Upload during trigger active**.

   Whichever option you select, you can also select how frequent the images should be uploaded to the email server in the **Image frequence [number] fps** drop-down list. Select an fps (frames per second) value from **1** to **15** fps, or select **Max** fps.

To upload images to an SD card that you have configured:

Note   A Micro SDHC card must be connected to the back panel of the camera for this function to work. See *Figure 2-5* and *Table 2-3* on *page 25* for the location to install the Micro SDHC card.

---

1. Under **Triggered action**, select the **Record stream to Micro SD/SDHC card** check box. The record to SD card options will appear below the check box (see *Figure 6-8*).

Figure 6-8   Record Stream to SD Card Options

2. In the **Pre-trigger buffer** field, enter the number of seconds of video to record before the trigger occurs (from 1 to 9999).

3. To continue to upload images for a specified period of time or until the alarm ends, choose the option that fits your requirements from the following selections:

   • Select **Upload for [number] sec** and enter a time from **1** to **9999** seconds.

   • Select **Upload during trigger active**.

To assign a PTZ camera function:

1. Under **Triggered action**, select the **PTZ Function** check box. The PTZ Function options will appear below the check box (see *Figure 6-9*).

Figure 6-9   PTZ Function Options

2. Select the PTZ function to perform on this alarm from the drop-down list: **Preset**, **Preset Tour**, **Autopan**, **Mimic Tour**. See *Configuring PTZ Settings on page 53* for more information on programming these PTZ functions.

3. Enter a value in the **Function line** field to identify the specific function to perform (for example, in *Figure 6-9*, **Preset 2** is selected).

4. If applicable (only available if **Preset** is selected), enter a value in the **Dwell time** field.

To send an HTTP notification to an HTTP server that you have configured:

1. Under **Triggered action**, select the **Send HTTP notification** check box. The Send HTTP notification options will appear below the check box (see *Figure 6-10*).

Figure 6-10   Send HTTP Notification Options

2. In the **HTTP address** drop-down list, select either **HTTP1** or **HTTP2**.

3. In the **Custom parameters** field, enter the parameters to send to the HTTP server when the alarm is triggered.

   For example, if the HTTP server name is *http://192.168.0.1/admin.php* and the custom parameter is `action=1&group=2`, the notification will be sent to the HTTP server as *http://192.168.0.1/admin.php?action=1&group=2* when the alarm is triggered.

Setting a File Name

You can specify a file name format for images uploaded when the alarm is triggered. Choose the format that best meets your requirements.

To specify a file name format:

1. In the **File Name** field (see *Figure 6-5*), type a file name (for example: `image.jpg`).

2. Select one of the following options for the file name format:

   • **Add date**/**time suffix** to add the date and time in YYMMDD_HHMMSS format (for example, image120428_034724.jpg).

   • **Add sequence number suffix (no maximum value)**.

   • **Add sequence number suffix up to [*number*] and then start over**, and enter a value in the number field.

   • **Overwrite** to overwrite an older file with a new file with a static filename.

Saving Alarm Input Settings

Click **Save** after you have configured the alarm input settings in the **Alarm Application** section of the **System** tab. See *Setting the Alarm Status and Type, page 78*, *Setting the Alarm Actions, page 79*, and *Setting a File Name on page 82* for more information.

Motion Detection Settings

You can set up the camera to send an alarm notification when suspicious motion is detected. An alarm is triggered when motion volume in the detected area reaches and/or exceeds a predefined sensitivity threshold value. You can send a message to an FTP, email, or HTTP server, or you can upload images to an FTP server, email server, or Micro SDHC card when the suspicious motion is detected.

Setting the Motion Detection Status

The motion detection function is disabled by default. When the motion detection function is activated, a pop-up window appears indicating the detected motion (as shown in *Figure 6-11*).

Figure 6-11   Current Motion as Detected Window
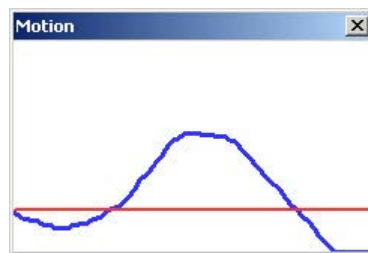
The red line indicates the threshold level of the motion sensitivity, as it is currently set.
The blue line indicates the level of motion that is currently being detected by the camera.

To enable motion detection:

1. Navigate to **System ➤ Motion detection** (see *Figure 6-12*).

2. Under **Motion Detection**, select **On**.

3. Click **Save**.

Setting the Motion Detection Window

A motion detection "window" or frame appears in the Live View screen to specify the area to detect motion within (see *Figure 6-12*). You can add up to 10 motion detection windows. You can move the window wherever you want in the Live View screen and you can adjust its size and shape.

To add a motion detection window:

Click **add** to add a new motion detection window to the Live View screen (see *Figure 6-12*). You can add up to 10 windows. The active window has a red border.

To delete a motion detection window:

In the Live View screen, select the window that you want to delete (to make it the active window, it will have a red border when active), and then click **delete** (see *Figure 6-12*).

Figure 6-12   Motion Detection Screen

To move the motion detection window:

In the Live View screen, click and drag from the center of the motion detection window to the new location.

To resize a motion detection window:

In the Live View screen, click and drag a corner or drag one of the sides of the motion detection window to adjust its size and shape.

Setting the Motion Detection Sensitivity

You can set the motion detection sensitivity by adjusting the pixel sampling parameters. The default pixel interval for sampling is 1 (every pixel in the motion detection area is sampled for motion). If the sampling interval is set to 3, the system samples every third pixel (vertically and horizontally) within the motion detection area (see *Figure 6-13*).

Figure 6-13   Motion Detection Sampling Every Three Pixels
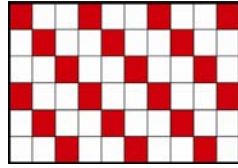
You can set the detection level for each sampled pixel. The smaller the value, the greater the sensitivity. To avoid triggering motion detection on small objects in the image, enter a higher value.

After you have defined the detection (sensitivity) level of each pixel, you can set the sensitivity level of the entire motion detection area. A setting of 80, for example, means that motion detection is triggered when 20 percent or more of the sampled pixels change (are in motion). The larger the sensitivity value, the greater the sensitivity of motion detection.

You can also set the time interval between each detected motion.

To set the motion detection sensitivity:

1. Under **Motion Detection Setting**, type a value between 1 and 10 in the **Sampling pixel interval** field (see *Figure 6-12*).
2. Type a value between 1 and 100 in the **Detection level** field (default = 10).
3. Type a value between 1 and 100 in the **Sensitivity level** field (default = 80).
4. Type a value between 0 and 7200 in the **Time interval(sec)** field (default = 10 seconds).

Setting the Motion Detection Actions

You can specify what actions you want the camera to perform when suspicious motion is detected in the active motion detection window. You can select more than one action. See the following sections for more information.

To enable alarm relay outputs:

Under **Triggered Action** (see *Figure 6-12*), select one or both of the **Enable alarm output 1** and **Enable alarm output 2** check boxes.

To upload images to an SD card that you have configured:

Note   A Micro SDHC card must be connected to the back panel of the camera for this function to work. See *Figure 2-5* and *Table 2-3* on *page 25* for the location to install the Micro SDHC card.

---

1. Under **Triggered Action**, select the **Record stream to sd card** check box. The record to SD card options will appear below the check box (see *Figure 6-8*).
2. In the **Pre-trigger buffer** field, enter the number of seconds of video to record before the trigger occurs (from 1 to 9999).

3. To continue to upload images for a specified period of time or until the alarm ends, choose the option that fits your requirements from the following selections:

   • Select **Upload for [number] sec** and enter a time from **1** to **9999** seconds.

   • Select **Upload during trigger active**.

To send an alarm message to an FTP/email server that you have configured:

Under **Triggered Action**, select one or both of the following:

• The **Send message by FTP** check box to send the message to the FTP server (see *Server Settings on page 75* for information on setting up an FTP server).

• The **Send message by E-Mail** check box to send the message to the mail server (see *Server Settings on page 75* for information on setting up an email server).

To upload images to an FTP server that you have configured:

1. Under **Triggered Action**, select the **Upload image by FTP** check box. The FTP options will appear below the check box (see *Figure 6-14*).

Figure 6-14   Upload Image by FTP Options for Motion Detection

2. In the **FTP address** drop-down list, select either **FTP1** or **FTP2** (see *To enable FTP alarm notifications: on page 76* for information on setting up an FTP address).

3. In the **Pre-trigger buffer** drop-down list, select the number of pre-trigger frames/images (1 to 20) to send to the server.

4. In the **Post-trigger buffer** drop-down list, select the number of post-trigger frames/images (1 to 20) to send to the server.

5. To continue to upload images to the server for a specified time, or until the motion alarm ends, select the **Continue image upload** check box, and choose one of the following:

   • Select **Upload for [number] sec** and enter a value from **1** to **9999** seconds.

   • Select **Upload during trigger active**.

   Whichever option you select, you can also select how frequent the images should be uploaded to the FTP server in the **Image frequence [number] fps** drop-down list. Select an fps (frames per second) value from **1** to **15** fps, or select **Max** fps.

To upload images to an email server that you have configured:

1. Under **Triggered Action**, select the **Upload image by E-Mail** check box. The email options will appear below the check box (see *Figure 6-15*).

2. In the **E-Mail address** drop-down list, select either **E-Mail 1** or **E-Mail 2** (see *To enable email alarm notifications: on page 75* for information on setting up an email address).

3. In the **Pre-trigger buffer** drop-down list, select the number of pre-trigger frames/images (1 to 20) to send to the server.

4. In the **Post-trigger buffer** drop-down list, select the number of post-trigger frames/images (1 to 20) to send to the server.

Figure 6-15   Upload Image by E-Mail Options for Motion Detection

5. To continue to upload images to the server for a specified time, or until the motion alarm ends, select the **Continue image upload** check box, and choose one of the following:

   • Select **Upload for [number] sec** and enter a value from **1** to **9999** seconds.

   • Select **Upload during trigger active**.

   Whichever option you select, you can also select how frequent the images should be uploaded to the email server in the **Image frequence [number] fps** drop-down list. Select an fps (frames per second) value from **1** to **15** fps, or select **Max** fps.

To send an HTTP notification:

1. Under **Triggered Action**, select the **Send HTTP notification** check box. The Send HTTP notification options will appear below the check box (see *Figure 6-16*).

2. In the **HTTP address** drop-down list, select either **HTTP1** or **HTTP2**.

Figure 6-16   Send HTTP Notification on Motion Detection

3. In the **Custom parameters** field, enter the parameters to send to the HTTP server when the alarm is triggered.

   For example, if the HTTP server name is *http://192.168.0.1/admin.php* and the custom parameter is `action=1&group=2`, the notification will be sent to the HTTP server as *http://192.168.0.1/admin.php?action=1&group=2* when the motion alarm is triggered.

Setting a Motion Detection File Name

You can specify a file name format for images uploaded when the motion alarm is triggered. Choose the format that best meets your requirements.

To specify a file name format:

1. In the **File Name** field (see *Figure 6-12*), type a file name (for example: `image.jpg`).

2. Select one of the following options for the file name format:

- **Add date/time suffix** to add the date and time in YYMMDD_HHMMSS format (for example, image120428_034724.jpg).

- **Add sequence number suffix (no maximum value)**.

- **Add sequence number suffix up to [*number*] and then start over**, and enter a value in the number field.

- **Overwrite** to overwrite an older file with a new file with a static filename.

Saving the Motion Detection Settings

After you have configured the motion detection settings in the **Motion Detection** section of the **System** tab, click **Save**.

Click **Save** after you have configured the motion detection settings in the **Motion Detection** section of the **System** tab. See *Setting the Motion Detection Status, page 83*, *Setting the Motion Detection Window, page 83*, *Setting the Motion Detection Sensitivity, page 84*, *Setting the Motion Detection Actions, page 85*, and *Setting a Motion Detection File Name on page 87* for more information.

Network Failure Detection Settings

You can set up the camera to send an alarm notification when a network failure is detected. You can send a message to an FTP or email server, or you can upload images to a Micro SDHC card.

To set up network failure detection:

1. Navigate to **System ➤ Network failure detection** (see *Figure 6-17*).

Figure 6-17 Network Failure Detection Options

2. Under **Detection Switch**, select **On** to enable the network failure detection function.

3. Under **Detection Type**, enter the IP address you want to ping in the **Ping the IP address** field. Enter how often to ping the IP address in the **every [number] seconds** field.

   The **every [number] seconds** field should be set from 5 to 120 seconds. The default setting is 30 seconds.

Note Honeywell recommends that you enter the IP address of the local recording device (DVR, NVR, and/or VMS system) which is used for local hard disk recording. This way, if the Network Failure Detection function detects a network failure with the local recording device, the camera can take an action such as recording to the Micro SDHC card to compensate.

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4. Under **Triggered Action**, do one or more of the following actions to perform when a network failure is detected:

   • Select one or both of the **Enable alarm output 1** and **Enable alarm output 2** check boxes to enable that alarm relay output.

   • Select the **Send message by FTP** check box to send a network failure message to an FTP server that you have configured (see *Server Settings on page 75* for information on setting up an FTP server).

   • Select the **Send message by E-Mail** check box to send a network failure message to an email server that you have configured (see *Server Settings on page 75* for information on setting up an email server).

   • Select **Record stream to sd card** to send images to a Micro SDHC card that you have configured.

      a. In the **Pre-trigger buffer** field, enter the number of seconds of video to record before the trigger occurs (from 1 to 9999).

      b. To continue to upload images for a specified period of time or until the alarm ends, choose the option that fits your requirements from the following selections:

         • Select **Upload for [number] sec** and enter a time from **1** to **9999** seconds.
         • Select **Upload during trigger active**.

5. Click **Save** to save your network failure detection settings.

7

Configuring System Settings

This chapter includes:

Note   The System tab can only be accessed by the Administrator.

System Settings

The System screen is open by default when the System tab is selected. Here you can give the HDZ Series 1080p IP PTZ camera a new host name and configure the camera's time-related settings. See *Viewing the System Parameters on page 115* for more information on the Parameters List section of the System screen.

Setting a Host Name

By default, the HDZ Series 1080p IP PTZ dome camera is named with the model number of the camera. If needed, the Administrator can rename the camera for their system:

1. Navigate to the **System** tab ➤ **System** (see *Figure 7-1*).

2. Type a new name for the camera in the **Host Name** field. The host name can be up to 30 characters in length. Any of the following characters may be used: A–Z, a–z, 0–9, !@#$%^'&-_~. Click **Save**.

Selecting the Camera Time Zone

1. Navigate to the **System** tab ➤ **System** (see *Figure 7-1*).

2. Use the **Time zone** drop-down list to select the time zone that the camera is installed in and click **Save**.

Figure 7-1   System Configuration Screen

Enabling Daylight Saving Time

You have the option of enabling daylight saving time (DST) for the camera, allowing the camera to automatically adjust the internal clock with the daylight saving time changes.

1. Navigate to the **System** tab ➤ **System** (see *Figure 7-1*).

2. Select the **Enable daylight saving time** check box to enable DST and the options.

3. Enter the DST time offset in the **time offset** field. The format for time offset is [hh:mm:ss]. For instance, if the amount of time offset is one hour, enter `01:00:00` in the field.

4. Setup dates for daylight saving time changes to take effect in the **Start date** and **End date** fields. The start date is the date daylight saving begins. The end date is the date that daylight saving ends for the year.

   a. Use the first drop-down list to select the start/end month.

   b. Use the second drop-down list to either select the exact day of the month to start/end daylight saving time or select the **1st**, **2nd**, **3rd**, **4th** or **last week** of the month option to have daylight saving start/end on the same day of the month every year (for example, the 2nd Sunday in March).

   c. If you use the **1st**, **2nd**, **3rd**, **4th** or **last week** of the month option in *step b*, select the day of the week DST starts/ends with the last drop-down list for the **Start**/**End date**.

5. Set the time that daylight saving time changes will take effect in the **Start time** and **End time** fields. The format for the time fields is [hh:mm:ss], and uses the 24-hour clock. For instance, if the DST should start at 11:30pm, enter `23:30:00` in the **Start time** field.

6. Click **Save** to save your DST settings.

Setting the System Clock

There are three options for setting the camera's internal clock: manually setting the time, synching with the computer time, or synching with an NTP server time.

To synchronize the camera time with the computer:

1. Navigate to the **System** tab ➤ **System** (see *Figure 7-1*).

2. Select the **Sync with computer time** option to set the time to sync with the computer and click **Save**.

To manually set the camera time:

1. Navigate to the **System** tab ➤ **System** (see *Figure 7-1*).

2. Select the **Manual** option and enter the date and time you want to set in the corresponding **Date** and **Time** fields.

3. Click **Save** to set the time.

To synchronize the camera time with an NTP server:

1. Navigate to the **System** tab ➤ **System** (see *Figure 7-1*).

2. Select the **Sync with NTP server** option to set the time to sync with the NTP server. Type the NTP server host name or IP address in the **NTP server** field.

3. Select to update the time/date every hour, day or week with the **Update interval** drop-down list and click **Save**. For additional information, visit www.ntp.org.

Security Settings

This section contains instructions for configuring user settings, network security settings (HTTPS and IEEE 802.1X), and the IP address filter settings.

User Settings

Changing the Administrator Password

The administrator password should be changed regularly. The password cannot contain more than 14 characters and is case sensitive. Any of the following characters may be used: A–Z, a–z, 0–9, !@#$%^'&-_~.

To change the administrator password:

1. Navigate to the **System** tab ➤ **Security** ➤ **User** (see *Figure 7-2*).

2. In the **Admin password** field, type the new password.

3. In the **Confirm password** field, re-type the new password, and then click **Save**.

Note   The Login window appears. You are asked to login with the new password.

Figure 7-2   User Security Options Screen

Managing Users

An administrator can add and delete users, as well as view and edit user privileges.

An administrator can create up to 20 user accounts. Each user can be assigned one or more of the following privileges:

Table 7-1   User Privileges

Privilege	Description
I/O access	User can view video, and input/output information when accessing the camera.
Camera control	User can change certain camera parameters.
Talk	User can talk (transmit audio) to other sites.
Listen	User can listen (receive audio) from other sites.

To add a user:

1. Navigate to **System ➤ Security ➤ User** (see *Figure 7-2*).

2. Under **Add User**, type the user name and user password in the corresponding boxes

3. Select the check boxes for each of the privileges to give this user (see *Table 7-1* for more information on user privileges).

4. Click **Add** to save the settings for the new user.

To delete a user:

1. Navigate to **System ➤ Security ➤ User** (see *Figure 7-2*).

2. Under **Manage User**, in the **User name** drop-down list, select the user you want to delete, and then click **Delete**.

To view a user's login information:

Navigate to **System ➤ Security ➤ User** (see *Figure 7-2*).

All the users in the network are listed in the **User information** field as [user name:password]. For example, User:4321 indicates that the user name is *User* and the password is *4321*.

Note   If user privilege information is currently displayed (see *To view a user's privileges:* below), click **get user information** to display the login information.

To view a user's privileges:

1. Navigate to **System ➤ Security ➤ User** (see *Figure 7-2*).

    All the users are listed in the **User information** field as [user name:password].

2. Locate the user you want to view in the **User information** field.

3. Click **get user privacy**.

    The user information in the **User information** field changes from [user name:password] to [user name:I/O access:camera control:talk:listen]. For example, User:1:1:0:1 indicates that *User* has I/O access, camera control, and listen privileges, but not talk privileges.

Network Security Settings

HTTPS

You can use HTTPS (Hypertext Transfer Protocol over SSL [Secure Socket Layer]) to establish a secure connection between the camera and the web browser. To use HTTPS, you must create a certificate. You can create a self-signed certificate or you can create a request for an official certificate issued by a CA (Certificate Authority).

> **Note** A self-signed certificate does not provide the same level of security as an official certificate.

Figure 7-3   HTTPS Settings Screen
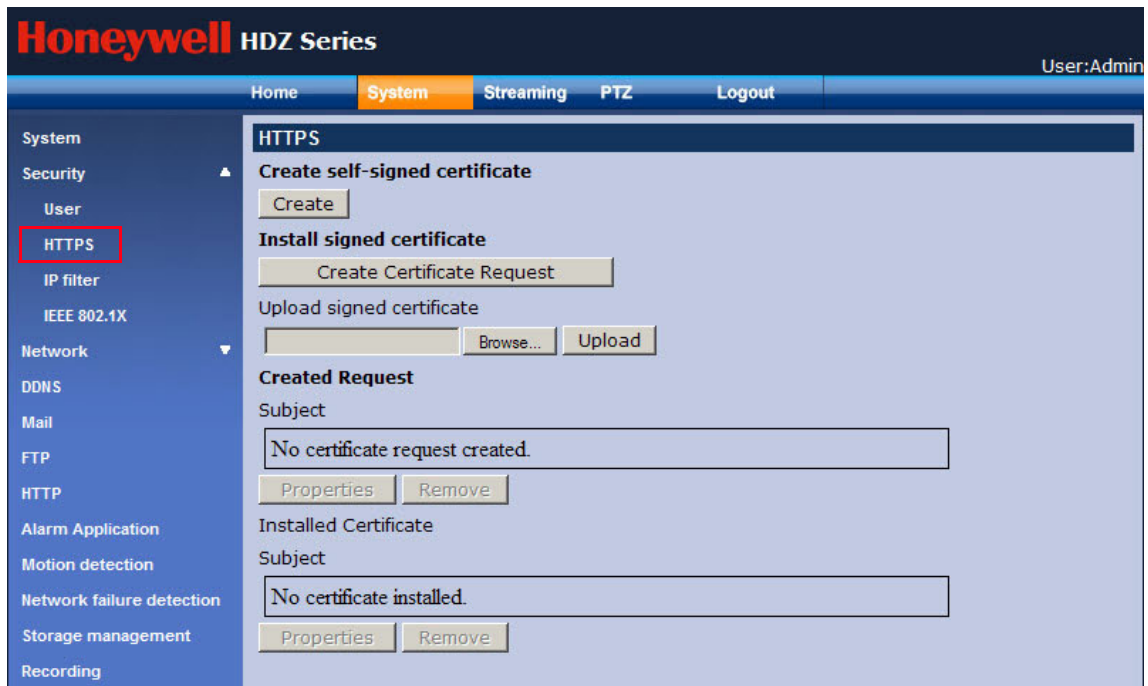
To create and install a self-signed certificate:

1. Navigate to **System ➤ Security ➤ HTTPS** (see *Figure 7-3*).

2. Under **Create self-signed certificate**, click **Create**.

3. Enter the required information in the **Create Self-Signed Certificate** fields (see *Figure 7-4*), and then click **OK**.

   A self-signed certificate is created and installed. The certificate appears under **Installed Certificate** (see *Figure 7-3*).

Figure 7-4   Create Self-Signed Certificate Window

To create a request for a CA-issued certificate:

1. Navigate to **System ➤ Security ➤ HTTPS** (see *Figure 7-3*).

2. Under **Install signed certificate**, click **Create Certificate Request**.

3. Enter the required information in the **Create Certificate Request** fields (see *Figure 7-5*), and then click **OK**.

Figure 7-5   Create Certificate Request Window

A certificate request is created. The request appears under **Created Request** (see *Figure 7-3*).

4. Click **Properties** in the **Created Request** area.

5. Copy the PEM-formatted request and send to a CA for signing.

   After the signed certificate is returned, you can install it.

To install a CA-issued certificate:

1. Navigate to **System ➤ Security ➤ HTTPS** (see *Figure 7-3*).

2. Click **Browse** in the **Upload signed certificate** area. Locate and select the certificate on your hard drive, and then click **Open**.

3. Click **Upload**.

IEEE 802.1X

IEEE 802.1X is an IEEE standard for port-based Network Access Control. When IEEE 802.1X is enabled, the camera can access network ports protected by 802.1X/EAPOL (Extensible Authentication Protocol over LAN).

Figure 7-6   IEEE 802.1X Settings Screen

To enable IEEE 802.1X:

1. Navigate to **System ➤ Security ➤ IEEE 802.1X** (see *Figure 7-6*).

2. Contact your network administrator to obtain the following items:

   • **CA certificate**: Required to authenticate the server

   • **Client certificate**: Required to authenticate the IP camera

   • **Private key**: Required to authenticate the IP camera

3. Upload the CA certificate, client certificate, and private key. Click **Browse** to locate the certificate or key, then click **Upload**.

4. Under **Settings**, in the **Identity** field, type the user identity associated with the client certificate. In the **Private key password** field, enter the password for the user identity.

5. Select the **Enable IEEE 802.1X** check box and click **Save**.

IP Filter

You can allow or deny specific IP addresses access to the camera. When the IP filter is enabled, the IP addresses in the list will be allowed or denied access to the camera based on the filter setting. To enable the IP filter:

1. Navigate to **System ➤ Security ➤ IP Filter** (see *Figure 7-7*).

Figure 7-7   IP Filter Settings Screen

2. Select the **Enable IP filter** check box.

3. Select **Allow** or **Deny** from the drop-down list, and then click **Apply**. The selection made here will determine how the IP Filter treats the addresses in the **Filtered IP Addresses** list (either allowing or denying access by those addresses).

4. In the field below the **Filtered IP Addresses** list box, enter an IP address you want to filter, and then click **Add**.

   To remove an IP address from the list, select the address in the list, and then click **Delete**.

5. Continue adding IP addresses to the **Filtered IP Addresses** list box, as needed.

Network Settings

This section contains instructions for assigning the camera a fixed IP address, setting the camera to automatically obtain a DHCP assigned IP address, enabling PPPoE, configuring ports, enabling IPv6 address configuration, prioritizing services, and enabling SNMP, UPnP, and DDNS.

Basic Network Settings

Assigning a Fixed IP Address

The camera is assigned a dynamic (DHCP) IP address by default. Use the Honeywell Device Search tool to find the automatically assigned dynamic IP address (refer to *Finding the Camera on a Network on page 29* for more information).

If required, you can assign the camera a fixed (static) IP address. You can also assign a fixed IP address in the Honeywell Device Search application (see *Assigning a Static IP Address to the Camera on page 30* for more information).

Figure 7-8   Basic Network Settings Screen

To assign the camera a fixed IP address:

1. Navigate to **System ➤ Network ➤ Basic** (see *Figure 7-8*).
2. Select the **Use fixed IP address** option in the **General** section of the screen.
3. Fill in the **IP address**, **Subnet mask**, **Default gateway**, **Primary DNS**, and **Secondary DNS** fields.
4. Click **Save** under the PPPoE Password field.

Setting a Dynamically Assigned IP Address

The camera is assigned a dynamic (DHCP) IP address by default. Use the Honeywell Device Search tool to find the automatically assigned dynamic IP address (refer to *Finding the Camera on a Network on page 29* for more information).

If a fixed IP address has been assigned (see *Assigning a Fixed IP Address on page 101*), you can set the camera to use a dynamically assigned (DHCP) IP address by selecting the **Get IP address automatically** option and clicking **Save** (see *Figure 7-8*).

> **Note** You can also assign a dynamic IP address to the PTZ camera by using the Honeywell Device Search tool (see *Figure 3-3* on *page 31*).

Enabling PPPoE

If you connect to the network using PPPoE (Point-to-Point Protocol over Ethernet), you can enable PPPoE support. To enable PPPoE support:

1. Navigate to **System ➤ Network ➤ Basic** (see *Figure 7-8*).
2. Select the **Use PPPoE** option in the **General** section of the screen.
3. Enter your PPPoE **User name** and **Password**, and then click **Save**.

Configuring Ports

You can change the settings of the ports listed in *Table 7-2*.

Table 7-2   Ports that Can be Individually Configured

Port	Description
Web Server (HTTP)	The default setting of the web server port is 80. Make sure to notify users of any change to this setting. For example, if you change the port of a camera whose IP address is 192.168.0.100 from 80 to 8080, users will need to type `http://192.168.0.100:8080` into the address bar of their web browser for the connection to be successful.
RTSP	The default setting of the RTSP port is 554. The setting range is from 1024 to 65535.
MJPEG over HTTP	The default setting of the MJPEG over HTTP port is 8008. The setting range is from 1024 to 65535.
HTTPS	The default setting of the HTTPS port is 443. The setting range is from 1024 to 65535. **Note** This setting cannot be the same as the web server port.

To change a port setting:

1. Navigate to **System ➤ Network ➤ Basic** (see *Figure 7-8*).
2. Under **Advanced**, enter a new port value in the field corresponding to the port you want to change, and then click **Save**.

Enabling IPv6 Address Configuration

If you are using a routed IPv6 (Internet Protocol version 6) network, you can enable IPv6 address configuration. To enable IPv6 address configuration:

1. Navigate to **System ➤ Network ➤ Basic** (see *Figure 7-8*).

2. Under **IPv6 Address Configuration**, select the **Enable IPv6** check box and click **Save**.

QoS (Quality of Service)

> **Note** Your network routers and switches must support QoS for these settings to apply.

Quality of Service (QoS) lets you prioritize traffic when network congestion occurs by assigning different service levels to different traffic types.

The following three types of traffic are used by the camera:

- Video (MJPEG over HTTP, RTP/RTSP, RTSP/HTTP)
- Audio
- Management (HTTP traffic, web browsing)

A DSCP (Differentiated Services Code Point) value must be assigned to each traffic type. The value appears in the traffic's IP header. When the traffic reaches a DSCP-capable network router or switch, the DSCP value in the header determines how it is processed (for example, how much bandwidth is reserved for it).

You can assign each traffic type a DSCP value from 0 to 63. The default setting is 0, which means that QoS is disabled.

Figure 7-9   Quality of Service (QoS) Network Settings Screen
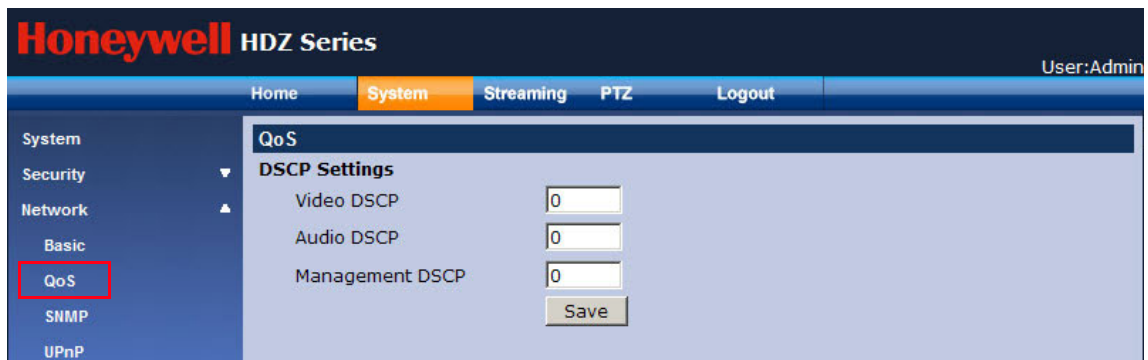
To configure the DSCP settings of the camera:

1. Navigate to **System ➤ Network ➤ QoS** (see *Figure 7-9*).

2. Under **DSCP Settings**, enter a DSCP value from 0 to 63 for **Video DSCP**, **Audio DSCP**, and **Management DSCP**, and then click **Save**.

SNMP

The Simple Network Management Protocol (SNMP) lets you monitor and manage the camera remotely. You can select the version of SNMP that you want to use (SNMPv1 or SNMPv2).

Figure 7-10   SNMP Network Settings Screen

Enabling SNMP (Version 1 or 2)

1. Navigate to **System ➤ Network ➤ SNMP** (see *Figure 7-10*).

2. Choose one of the following:

    • To use SNMP version 1, select the **Enable SNMP v1** check box.

    • To use SNMP version 2, select the **Enable SNMP v2** check box.

3. In the **Read Community** field, specify the community name (password) for read-only access to all supported SNMP objects. The default value is *<public>*.

4. In the **Write Community** field, specify the community name (password) for read/write access to all supported SNMP objects (except read-only objects). The default value is *<private>*.

5. Click **Save**.

Activating Trap Reporting

Traps are used by the camera to notify the management server of important events or status changes by means of an unsolicited SNMP message. To activate trap reporting:

1. Navigate to **System ➤ Network ➤ SNMP** (see *Figure 7-10*).

2. Under **Traps for SNMP v1/v2**, select the **Enable traps** check box.

3. In the **Trap address** field, type the IP address of the management server.

4. In the **Trap community** field, specify the community name to use when sending a trap message to the management server. The default value is *<public>*.

5. Optionally, select the **Warm start** check box to have the camera perform a software reload when a trap message is sent.

6. Click **Save**.

UPnP

Universal Plug and Play (UPnP) is an architecture in Windows XP that supports peer-to-peer Plug and Play fuctionality for network devices. UPnP is enabled on the camera by default. To use this function, UPnP must be also be installed on your computer.

To install UPnP in Windows XP:

1. Open the **Start** menu and click **Run**. Type **appwiz.cpl**, and then click **OK**.

2. Click **Add**/**Remove Windows Components**.

3. In the **Windows Components Wizard** dialog box (see *Figure 7-11*), in the **Components** window, click **Networking Services**, and then click **Details**.

Figure 7-11   Windows Components Wizard Dialog Box
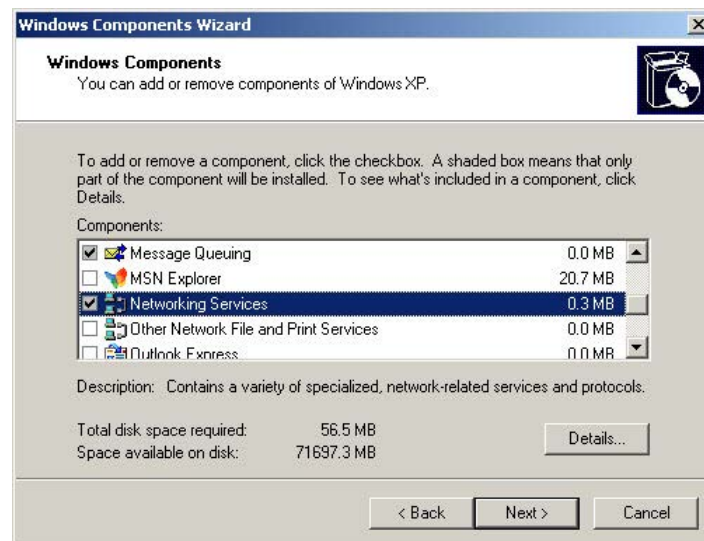
4. In the **Networking Services** dialog box (see *Figure 7-12*), in the **Subcomponents of Networking Services** window, select the **UPnP User Interface** check box, and click **OK**.

Figure 7-12   Networking Services Dialog Box
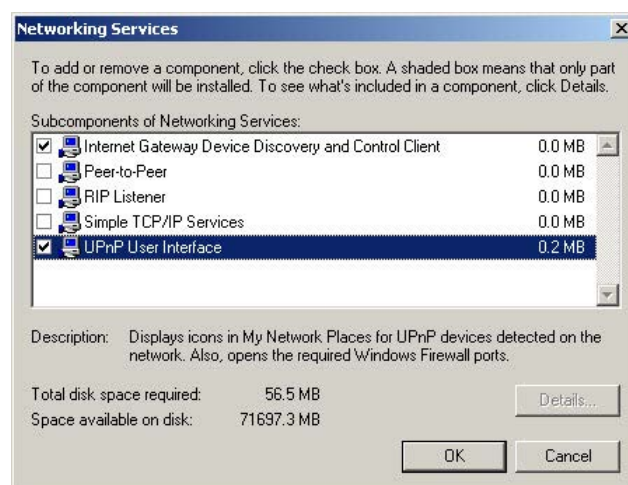
5.   Click **Next** to install the UPnP User Interface, and then click **Finish**.

Note   When UPnP port forwarding is enabled, the camera can open the web server port on a UPnP-enabled router automatically.

To enable UPnP port forwarding:

1.   Navigate to **System ➤ Network ➤ UPnP** (see *Figure 7-13*).

Figure 7-13   UPnP Settings Screen
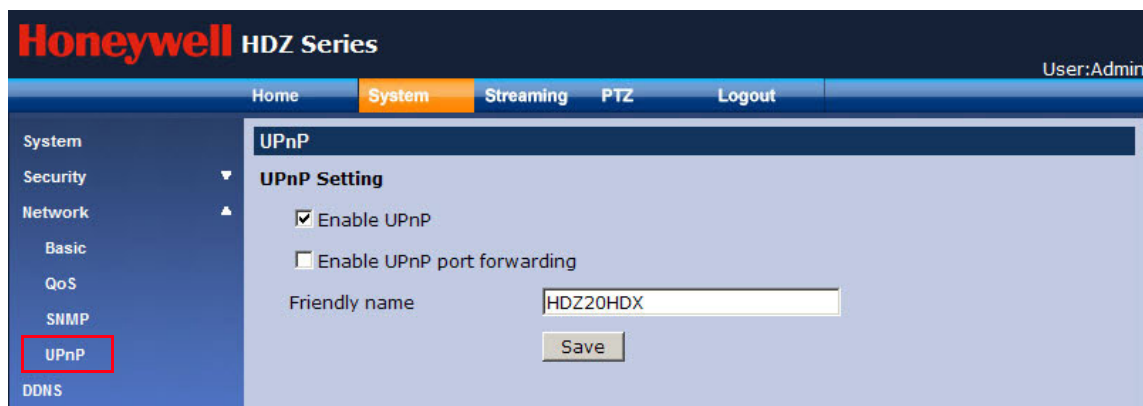
2.   Under **UPnP Setting**, select the **Enable UPnP port forwarding** check box and click **Save**.

Note   To enable the UPnP function, make sure that your router supports UPnP and that it is activated on your PC.

DDNS

Dynamic DNS (DDNS) service allows dynamic IP addresses to be synchronized to a static host name (domain name). To enable Dynamic DNS:

1. Navigate to **System** ➤ **Network** ➤ **DDNS** (see *Figure 7-14*).

2. Select the **Enable DDNS** check box.

3. Select a DDNS provider from the **Provider** drop-down list.

4. In the **Host name** field, type the static domain name obtained from the DDNS provider.

5. In the **Username**/**E-mail** field, type the user name or email required by the DDNS provider for authentication.

6. In the **Password**/**Key** field, type the password or key required by the DDNS provider for authentication.

7. Click **Save** to save the settings.

Figure 7-14   DDNS Settings Screen

Recording and Storage Settings

This section describes how to set up a recording schedule and how to manage SD card storage and the file storage location (PC storage).

Recording Settings

You can set the camera to record continually, disable recording or you can specify a particular timeframe (schedule) to record in.

To configure recording settings:

1. Navigate to **System ➤ Recording** (see *Figure 7-15*).

2. Under **Recording Schedule**, select one of the following:

    - **Disable** to turn off the scheduled recording function (default selection). Motion recording and alarm recording are enabled/disabled in their respective sections.

    - **Always** to record continually.

    - **Only during time frame** to record during a particular time frame.

3. If **Only during time frame** is selected, select the check boxes for the days of the week that you want to record, and enter the **Start time** [hh:mm] and **Duration** [hh:mm]. You can configure up to 10 recording profiles (select the profile, 1–10, in the schedule window).

4. Click **Save** to save your settings. If you are setting up multiple recording profiles, click **Save** after setting each profile.

Figure 7-15   Recording Schedule Screen

Storage Management

You can record between 8 and 32 GB of data on a Micro SDHC card. A Micro SDHC card of any size between 8 and 32 GB can be installed into the Micro SDHC card slot on the back plate of the camera (see *Figure 2-5* and *Table 2-3* on *page 25*).

It is a good practice to format your Micro SDHC card before using it for the first time.

To view the amount of free space remaining on your Micro SDHC card:

1. Insert a Micro SDHC card into the slot on the back of the camera (see *Figure 2-5* and *Table 2-3* on *page 25*).

2. Navigate to **System** ➤ **Storage Management** (see *Figure 7-16*).

The amount of free space on the card is listed under **Device information** (in the *Figure 7-16* example, there is no Micro SDHC card installed, so the free space is **0 KB**).

To format your Micro SDHC card:

1. Navigate to **System** ➤ **Storage Management** (see *Figure 7-16*).

Note Before formatting your Micro SDHC card, be sure to stop all current recordings that your camera may be performing (check and stop schedule, alarm, motion and network failure recordings that are set).

2. Click **Format** in the **Device setting** area of the Storage Management screen.

Figure 7-16   Storage Management Settings Screen

To manage disk cleanup settings:

1. Navigate to **System** ➤ **Storage Management** (see *Figure 7-16*).

2. Select the **Enable automatic disk cleanup** check box in the **Disk cleanup setting** area of the screen.

3. In the **Remove recordings older than** fields, enter how long you want the recordings to remain on the Micro SDHC card (the default setting is 1 day).

4. In the **Remove oldest recordings when disk is [percentage] % full** field, enter a percentage value between 1 and 99 for how full the Micro SDHC card will get before recordings are removed (the default setting is 85%).

5. Click **Save**.

To manage the list of recorded video files:

1. Navigate to **System ➤ Storage Management** (see *Figure 7-16*).

2. In the **Recording list** area of the screen, perform one or more of the following procedures:

   • Select a recording file, and then click **Remove** to remove the file from the list.

   • Click **Sort** to list the files in descending order by name and date.

   • Select a recording file, and then click **download** to open/download the file. A pop-up window opens. Click the link in the pop-up window to play the video, or right-click the link to download it to a specified location on your computer.

Note   During continuous recordings onto the SD card, there will be an omitted 1-2 seconds of video between recorded files. This omission is due to file creation.

File Location

Users can record still images and video clips by clicking the record action buttons in the Home viewing window (see *Understanding the Web Client User Interface on page 34* for more information). Use the File Location screen to choose the local folder where still images and video clips will be saved. To choose a file location:

1. Navigate to **System ➤ File Location** (see *Figure 7-17*).

Figure 7-17   File Location Setting Screen

2. In the **All files stored at** field, either type the folder pathway into the field or click Select to browse for, select and save the file location.

3. Click **Save** to save the file location displayed in the **All files stored at** field.

Maintenance Settings

This section describes how to restore the camera to its factory default settings, how to manage your configuration files, and how to upgrade the camera firmware.

Restoring Factory Defaults

You can either restore all the factory default settings, or all the factory default settings except for the network settings. You can also reboot the system without restoring default settings.

Note There is also a Factory Default button on the bottom panel of the PTZ. Press this button to restore factory default settings. See *Table 2-3* on *page 25* for more information.

To restore all factory default settings, including the network settings:

1. Navigate to **System** ➤ **Factory Default** (see *Figure 7-18*).

2. Click **Set Default**.

   All changes are lost and the system restarts after 100 seconds. The camera's IP address is reset to the default setting.

Figure 7-18   Resetting to Factory Default Screen
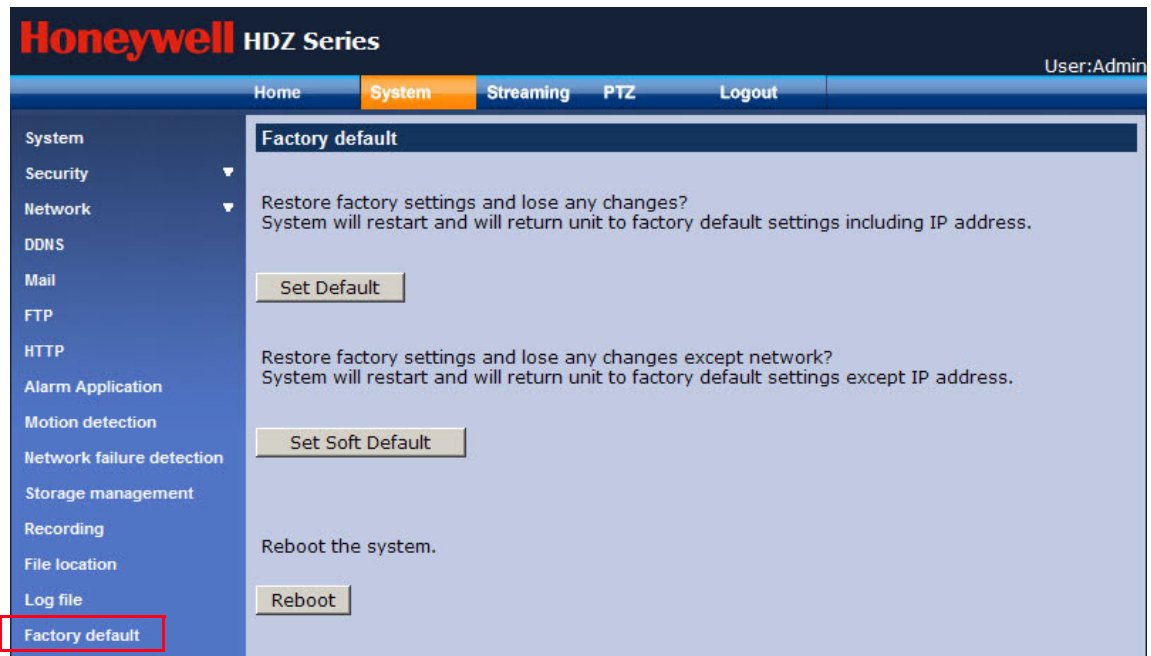
To restore all factory default settings, except the network settings:

1. Navigate to **System** ➤ **Factory Default** (see *Figure 7-18*).
2. Click **Set Soft Default**.

    All changes except the network settings are lost and the system restarts after 100 seconds.

To reboot the camera without changing the current settings:

1. Navigate to **System** ➤ **Factory Default** (see *Figure 7-18*).
2. Click **Reboot**.

    The system restarts without changing the current settings.

Upgrading the Software

To upgrade the firmware:

1. Download the software upgrade file to your hard drive. Make a note of the file location.
2. Navigate to **System** ➤ **Software Upgrade** (see *Figure 7-19*).

Figure 7-19   Software Upgrade Options Screen

3. Click **Browse** to locate the upgrade file on your hard drive, and then click **Open**.

4. Select the file (*uImage+userland.img*) to upgrade from the drop-down list.

Note   If a switch/main/module upgrade is needed, choose the appropriate upgrade file from the drop-down list (switch.bin/main.bin/module.bin).

---

5. Click **Upgrade**.

6. After the upgrade is complete, close your browser.

7. Open the **Start** menu, click **Control Panel**, and then double-click **Add or Remove Programs**.

8. Select **Honeywell Viewer** from the list of programs and then click **Remove**.

9. Open your web browser and access the camera (see *Accessing the Camera from a Browser on page 31*). Then allow the automatic download of the Honeywell Viewer.

Maintenance of Configuration Files

You can export and upload the configuration files for the system to enable restoring configuration at a later date. The configuration file includes the settings made on the System and Streaming tabs of the camera (see *Configuring System Settings on page 91* and *Configuring Video and Audio Streaming on page 39* for more information on these settings).

To export configuration files:

1. Navigate to **System** ➤ **Maintenance** (see *Figure 7-20*).

2. Click **Export**.

3. Select a location to save the configuration file and click **Save**.

Figure 7-20   Maintenance of Configuration Files Screen
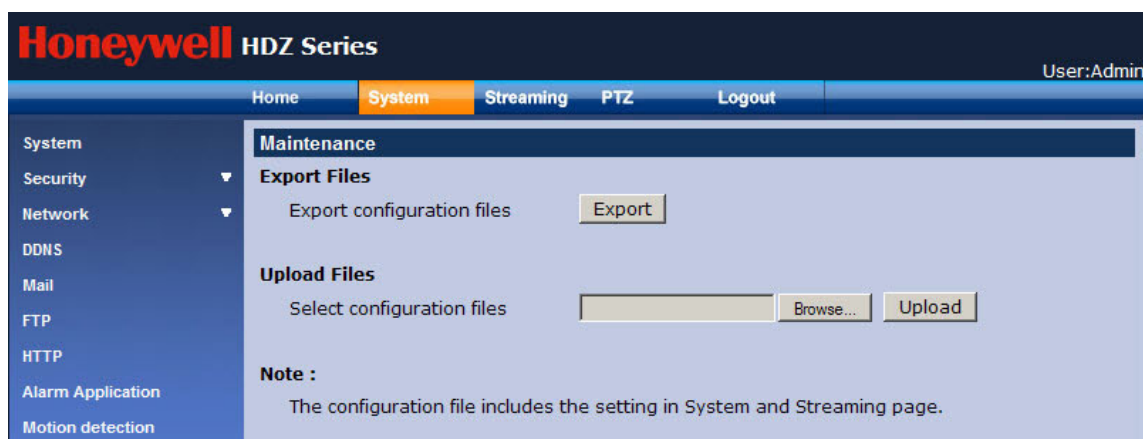
Note	Please do not change the configuration file name once downloaded. Renamed files will not be recognized when you try to upload it as a configuration file.

To upload configuration files:

1. Navigate to **System** ➤ **Maintenance** (see *Figure 7-20*).

2. Click **Browse** to find the configuration file you want to upload. Locate and open the configuration file. The file name appears in the field beside the **Browse** button.

3. Click **Upload**. The system will start to upload the configuration file (see *Figure 7-21*).

Figure 7-21   Uploading Configuration File In Progress
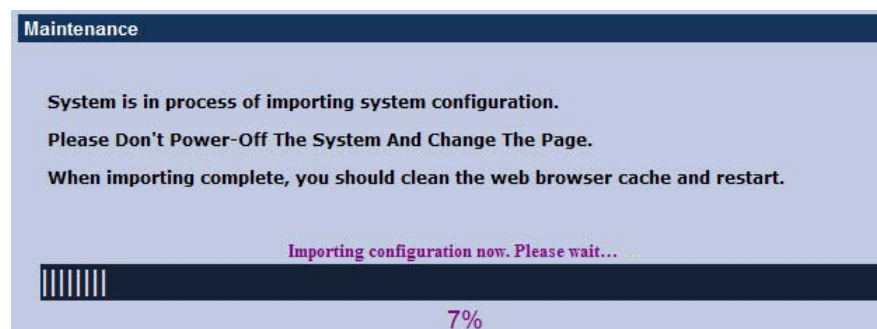
4. Once the uploading is complete, it is recommended that you clean out the web browser cache and then restart the web browser.

| **Note** | The configuration file should be uploaded into the PTZ with the same version firmware. |

Support Settings

This sections describes how to view lists of system parameters and system log files.

Viewing the System Parameters

To view the system parameters list, which lists the configuration settings that have been applied to the system:

1. Navigate to the **System** tab ➤ **System**.
2. Scroll down to the bottom of the window to view the **Parameter List** (see *Figure 7-22*).

    You can view the current system configuration settings in the **Parameter List**.

Figure 7-22 Viewing System Parameters List
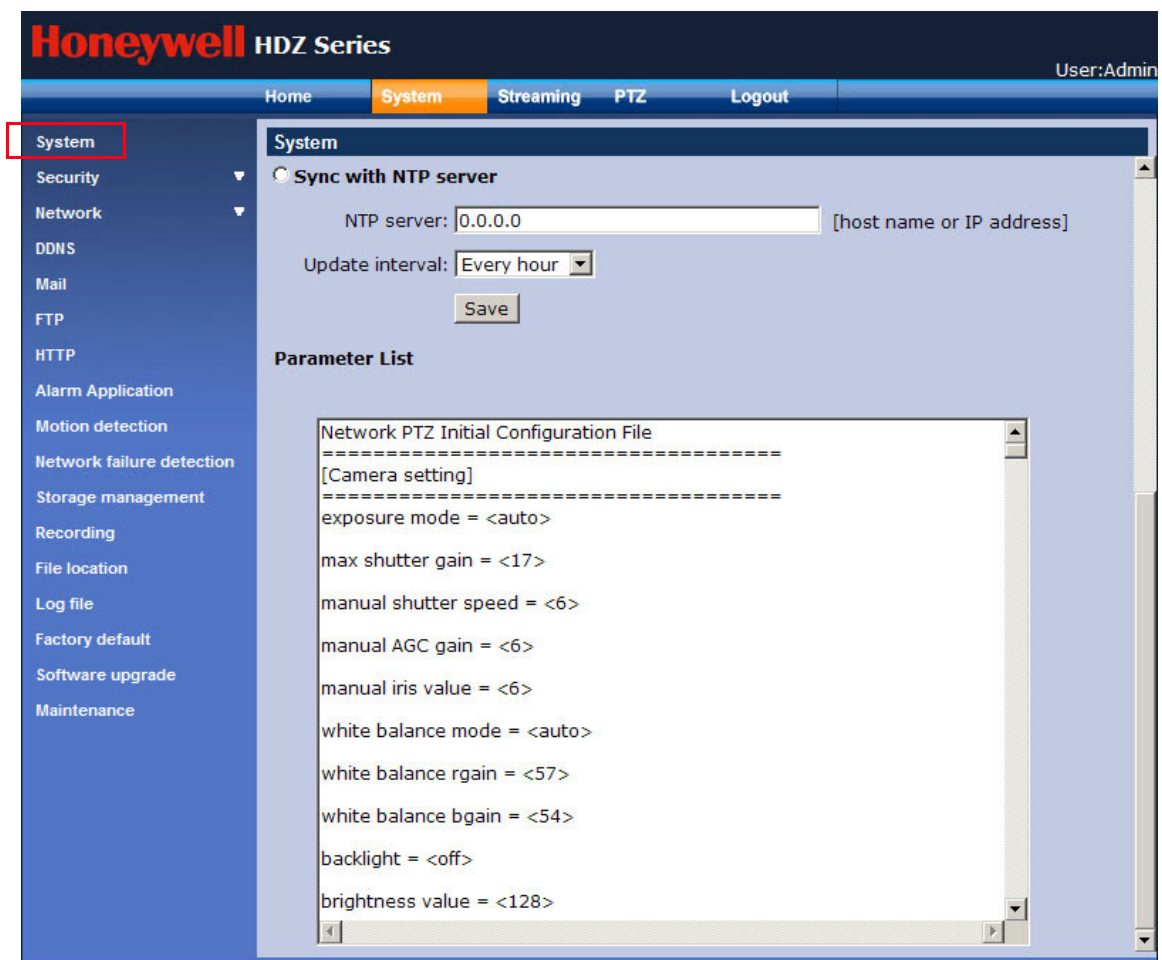
Viewing the Log File

The system log file provides information to the user about the camera activities. Camera activity information includes: login/logout, alarm in, motion detection, and network failures. To view the system log:

Navigate to **System ➤ Log file** (see *Figure 7-23* for a system log example).

Figure 7-23   Viewing System Log

A
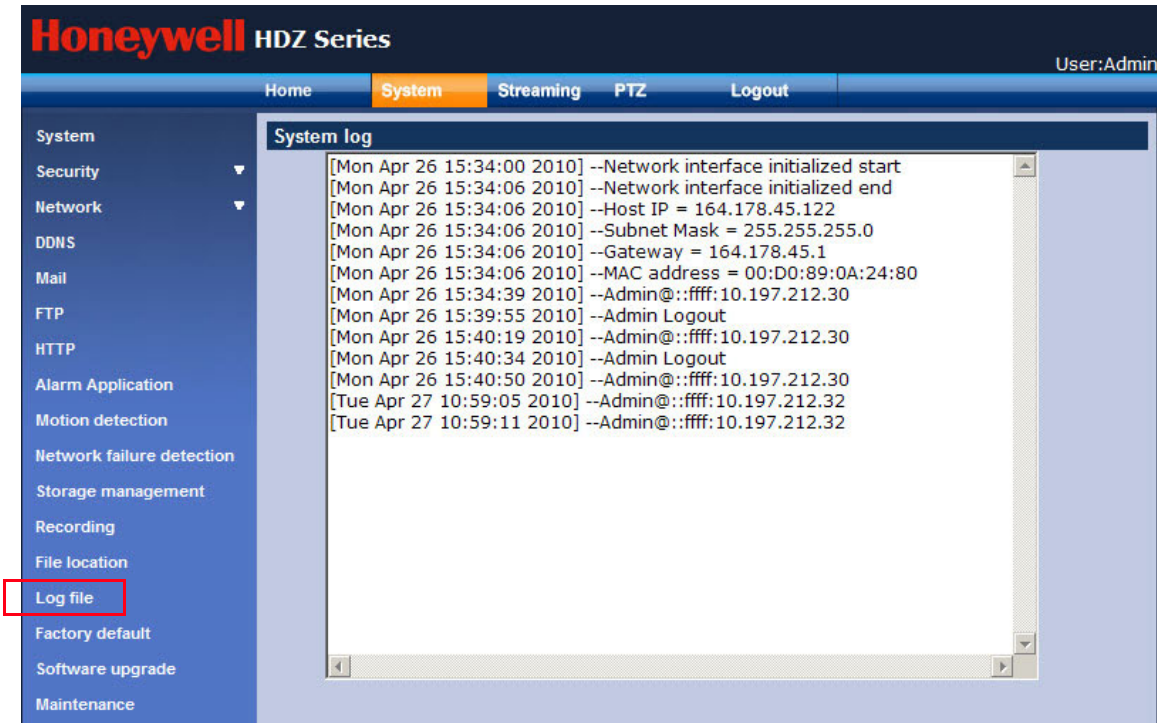
HDZ Camera Specifications

Table A-1   HDZ20HD(X) Series Camera Specifications

Specification	Description
Camera Specifications	
Scanning System	NTSC / PAL
Image Sensor	1/2.8" Sony Progressive CMOS
Optical Zoom	20x
Number of Pixels (H x V)	1920 x 1080 (1080p)
S/N Ratio	>50 dB (AGC Off)
Minimum Illumination	0.05 lux (color) / 0.01 lux (Black/White) @ F1.6, 30 IRE
Focal Length	0.2 in. to 3.7 in. (4.7 mm to 94.0 mm)
Focus Mode	Auto / Manual
White Balance	Auto / Indoor / Outdoor / ATW / Manual
Iris Control	Auto / Manual
Electronic Shutter	1/1 ~ 1/10,000 sec
ACG Control	Auto / Manual (Max Gain limit settings for Full Auto, Shutter Priority, and Iris Priority modes)
Backlight Compensation	On / Off
Privacy Masks	16
Wide Dynamic Range	On / Off
Day / Night: IR Cut Filter	Auto / On / Off
Image Rotation	Flip / Mirror / Inverse / Portrait
Digital Noise Reduction (2D)	On / Off
Operation Specifications	
Multi-Language GUI	English, French, German, Italian, Russian, Spanish, Portuguese, Dutch, Czech, Polish, Chinese
Pan Travel	360° endless
Tilt Travel	-10° to 190°

Table A-1   HDZ20HD(X) Series Camera Specifications (cont'd)

Specification	Description
Operation Specifications (cont'd)	
Manual Pan Speed	0.5° to 200°/s
Manual Tilt Speed	0.5° to 84°/s
Presets	256
Preset Accuracy	0.225°
Preset Speed	Up to 400°/s
Preset Tour	8
Auto Pan	4
Mimic Tour	8
Proportional Pan & Tilt	On / Off (Pan and tilt speed proportional to zoom ratio)
Auto-Resume after Power Loss	Yes
Home Function	Preset, Preset Tour, Auto Pan, Mimic Tour
Auto Flip[a]	Image / Mechanical / Off
Digital Slow Shutter	On / Off
Motion Detection	On / Off
Alarm In	4
Alarm Reaction	Preset, Preset Tour, Auto Pan, Mimic Tour
Alarm Out	2
Event Notification	HTTP, FTP, SMTP
Network Specifications	
Video Compression	H.264 Main Profile / MJPEG
Video Streaming	Dual streaming: H.264 and MJPEG Controllable frame rate and bandwidth. Constant or variable bit rate.
Video Resolution	Up to 1920 x 1080p
Frame Rate	Up to 30/25 fps
Interface	10/100 MB Ethernet (RJ-45)
Supported Protocols[b]	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, IEEE 802.1x, QoS, ONVIF
Simultaneous Users	3 at 1080p / 5 at D1
Supported Web Browser	Internet Explorer (8.0+)
Supported Operating System	Windows 7 (32-bit / 64-bit)
Security	User account and password protection HTTPS, IP Filter, IEEE 802.1x

Table A-1   HDZ20HD(X) Series Camera Specifications (cont'd)

Specification	Description
Network Specifications (cont'd)	
Audio Streaming	Full-duplex, Simplex
Audio Compression	G.711 / G.726 ADPCM / AAC
General Specifications	
Environment	Indoor / Outdoor
Casing	IP66 Standard (Outdoor)
Dimension	Indoor: ø 7.55" x 10.83" (ø 192.00 mm x 275.07 mm) Outdoor (with sunshield): ø 7.64" x 10.65" (ø 193.96 mm x 270.49 mm)
Weight	Indoor: 4.85 lb (2.2 kg) Indoor (with in-ceiling bracket): 6.83 lb (3.1 kg) Outdoor (with sunshield): 5.73 lb (2.6 kg)
Operating Temperature	Indoor: 32°F to 104°F (0°C to 40°C) Outdoor: -49°F to 131°F (-45°C to 55°C)[c]
Relative Humidity	Indoor / Outdoor: 10% to 90%, non-condensing
Waterproof Standard	IP66 standard (HDZ Outdoor)
Power Source	Indoor: 24 VAC ±10% and PoE+, IEEE 802.3at-2009 Outdoor: 24 VAC ±10% and PoE+, IEEE 802.3at-2009 (without heater)
Power Consumption	Indoor: 20 W Outdoor: 50 W (with heater)
Local Storage	Micro SDHC 32 GB support (card is not included) (see *Micro SDHC Card Details on page 26* for Micro SDHC card support details)
Micro SD Card Function	Event trigger recording Continuous and Schedule recording Automatic recording when network goes down
Regulatory	
Communication	ONVIF Support
Emissions	CE EN61000-6-3, FCC Part 15B
Immunity	CE EN50130-4
Safety	EU: EN60950-1, EN60950-22
RoHS	2011/65/EU

[a] Note there may be some image loss during the digital image flipping point.
[b] Some development may be required in specific user cases to support some of these protocols in the field, as naturally the protocols will mature over time.
[c] Protecting the dome from direct sunlight in high temperature environments is advised.

B

In-Ceiling Bracket Installation

This document describes how to install an HDZ Series camera in a suspended ceiling using the HDZINBKT in-ceiling bracket.

⚠ **CAUTION**   **Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.**

⚠ **CAUTION**   **Ensure that the installation area can safely support the weight of the camera.**

Figure B-1   In-Ceiling Bracket Dimensions
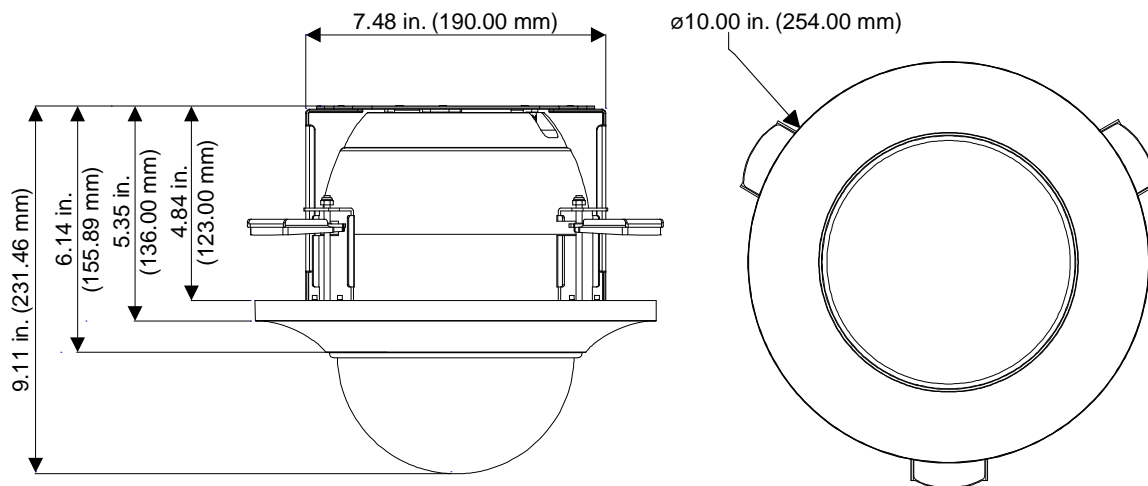
Package Contents

Bracket Frame

Ceiling Support Ring

Trim Ring
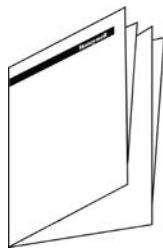
Quick Installation Guide
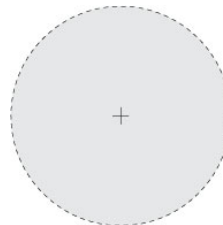
Ceiling Template

Recommended

Ceiling Support Plate, Honeywell Part Number **517082-7130** (not supplied)

Installing the In-Ceiling Bracket

It is recommended that you use a ceiling support plate (Honeywell part number 517082-7130) when installing the HDZINBKT in-ceiling bracket in a suspended ceiling.

Step 1: Cut a hole in the ceiling

1. Select the location where you want to install the camera. The installation area must be able to safely support the weight of the camera.

2. Do one of the following:

Installation with Ceiling Support Plate	Installation without Ceiling Support Plate
a. Remove the ceiling tile at the selected location and fit the ceiling tile inside the ceiling support plate. If necessary, trim the edges of the tile so that it fits snugly inside the support plate.	Place the supplied ceiling template on the ceiling at the selected location and cut around the template.
b. Cut a hole in the ceiling tile 197 mm (7.75 in.) in diameter matching the opening in the ceiling support plate.	
c. Replace the ceiling tile (with ceiling support plate attached) in the ceiling.	

3. Attach a safety cable (not supplied) to a grid support or other structural support in the ceiling.

Step 2: Install the ceiling support ring

1. Insert the ceiling support ring (with wing tabs turned inward) into the opening in the ceiling.

2. Turn the wing tabs outward, and then tighten the three M4×70 screws located on the underside of the ceiling support ring to lower the wing tabs against the ceiling tile.

A   B   C
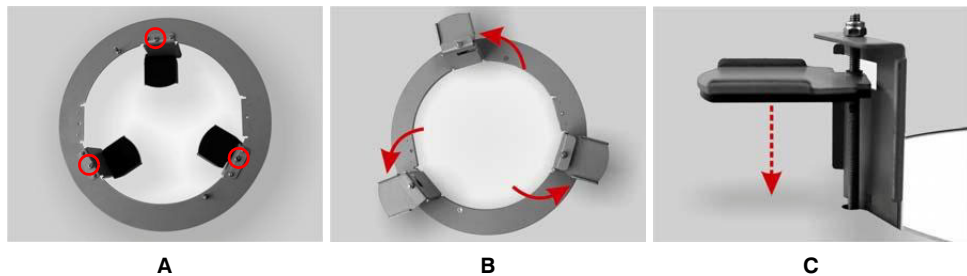
3. Continue tightening the screws until the ceiling support ring is tight against the ceiling.

Step 3: Attach the camera to bracket frame

1. Place the camera against the base of the bracket frame and twist it clockwise until it locks in place.
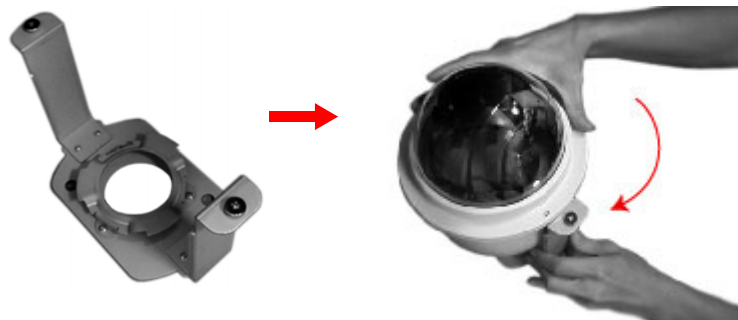
2. Tighten the pre-installed Torx screw on the camera housing to secure the camera to the bracket frame.

Step 4: Install the camera and bracket assembly

1. Pull the loose end of the safety cable through the opening in the ceiling and attach it to one of the eyelets on the bracket frame.

2. Pull the camera cable(s) through the opening in the ceiling and connect the cable(s) to the camera.

3. Insert the camera and bracket assembly into the opening in the ceiling and attach the camera and bracket assembly to the ceiling support ring using the two supplied thumb screws. Use a Phillips driver to tighten the screws.
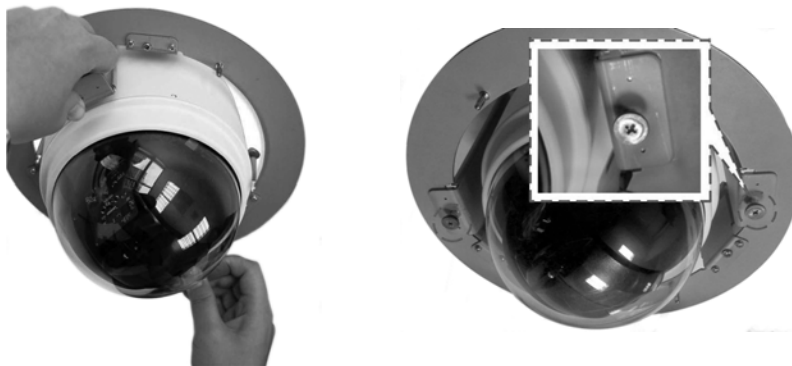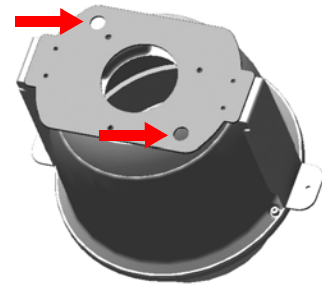
Step 5: Attach the trim ring

Attach the trim ring to the ceiling support ring by lining up the two magnets on the trim ring with the two thumb screws on the ceiling support ring.
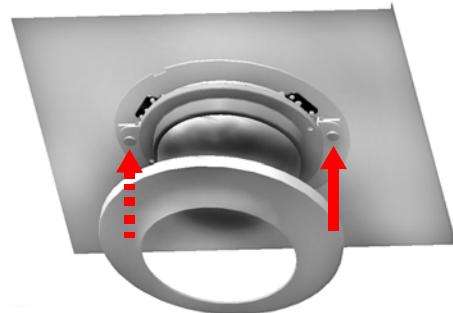
Note No screws are needed to attach the trim ring.

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Numerics

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